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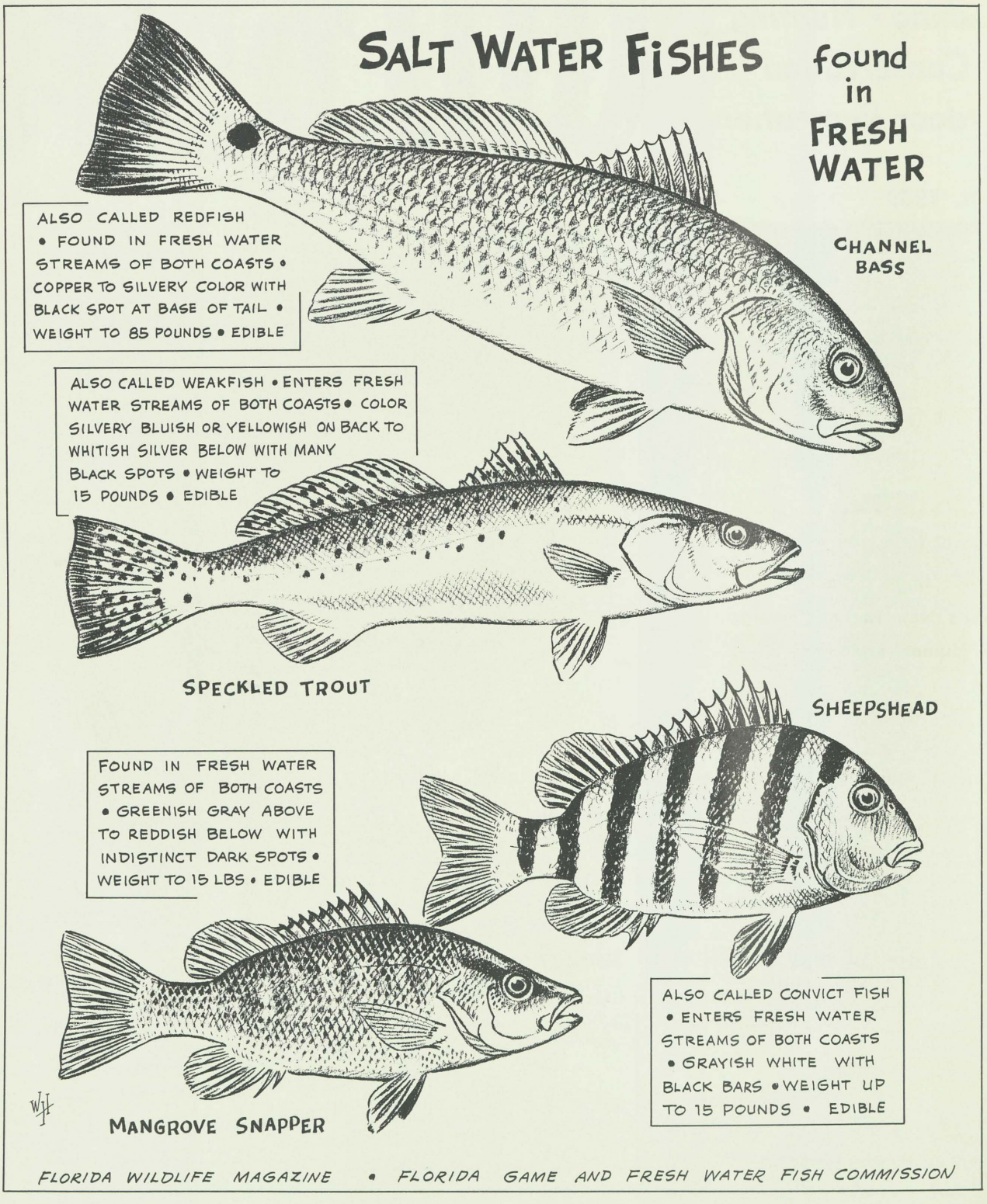
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In This Issue

Meet The Crested Flycatcher ..... Wallace Hughes 4
The All-Purpose Fish ..... Gene Smith 10
Habitat Improvement—Part 2 ..... Werner O. Nagel 16
What's New In Fly Fishing ..... Charles Waterman 22
The Human Lemmings ..... Ernest Swift 27

Departments

Fish Management Notes 6
Fishing 7
Hunting 29
Conservation Scene 32
The Brown Pelican 34

The Cover

Striped bass are well-known for their size, "fight" and eating qualities. There is a distinct possibility they may soon be catchable in most of Florida's big lakes. *See page 10.*

From A Painting By Wallace Hughes

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The pugnacious male Crested Flycatcher, above, keeps vigil near a backyard nesting box in which its mate is incubating eggs. Portrait, left, shows crest raised. The male and female look exactly alike.

"Bold," "jaunty" and "dashing" are adjectives that well describe the Crested Flycatcher, a member of the family of insect-eating birds called Tyrant Flycatchers. It is a handsome bird, nine inches long, mostly brown and gray with a yellow belly and reddish wings and tail.

They build their nests in a hollow of some kind—an abandoned woodpecker hole, a cavity in a tree limb, a roadside mailbox or newspaper tube, or in a nesting box provided by human friends. A remarkable thing about this bird is the fact that it nearly always includes a bit of castoff snakeskin in the makeup of its nest.

Its eggs, usually 4 to 6 in number, are buff colored with streaks of purple and black. Found throughout Florida in the summer, Crested Flycatchers of the northern half of the state retire to south Florida during the winter months. ●

Arriving at nesting box on outstretched wings, left, the parent brings food for its young. At right, it eyes the photographer before departing on another "fly" catching trip—an arduous task when box is filled with hungry mouths to feed.

Meet The Crested Flycatcher

Photo Story
By WALLACE HUGHES

The Crested Flycatcher is not a shy bird. It is, in fact, noted for its aggressiveness. Its voice is loud but not musical. A most common call sounds like the word "freight"—is responsible for it being called by many as "freight-bird." "Wheep" is another common call note. A bird of the woods it perches over high open places, and watches for the flying insects, which it adeptly captures on the wing. At right it perches on the clothesline near by its nesting box—with a dragonfly in its beak.

Fish Management Notes

THE FIGURES CHANGE almost daily, but in early January the Florida Air & Water Pollution Control Commission was considering more than 180 active cases of violations of state pollution codes, according to Director Vincent D. Patton's office, Tallahassee.

Included were some 140 direct citations in the fields of domestic sewage, industrial waste, air pollution and solid waste disposal—directed against industries, municipalities and privately owned sewage treatment facilities in the state.

Also included were about 40 letters notifying industries they are in violation of pollution laws. Many are expected to remedy the cited problems without court action. Legal action *has* been initiated or completed, however, in about a dozen cases, and a number of others are in the hands of the attorney general's office awaiting court action or further review.

Three separate legal actions were instituted by the attorney general for the Air & Water Pollution Control Commission in January. One suit was filed in Wakulla County Circuit Court against Seminole Asphalt Refining, Inc., and Tarpon Terminals, Inc. in connection with a late December 1968 oil spill from a barge off St. Marks.

Another suit was filed in Circuit Court, Martin County, against Hobe Grove Associated, Inc., alleging responsibility for a fish kill in the St. Lucie River caused by a herbicide which escaped from a drainage ditch. The third suit was filed in Lake County Circuit Court against B & W Canning Company in connection with a large fish kill in Lake Catherine. The suit alleges that citrus wastes were allowed to escape into the lake.

The suits seek damages, costs and civil penalties under authority of Chapter 403, Florida Statutes, which allows penalties up to $1,000 for each violation. Each day is considered a separate violation under the law.

A MAJOR pollution-caused fish kill occurred in Lake Thonotosassa, in Hillsborough County, the week of January 27th, according to the Game and Fresh Water Fish Commission's regional fishery biologist, Jon Buntz, Lakeland.

He said the problem had been building up for several years, adding, "We've warned people until we were blue in the face this was going to happen."

Six sources of pollution were named by the biologist: Salada-Sherriff-Horsey, Inc., Breyer Ice Cream, Plant Industries, Inc., Sugar Rose Canning Company, Paradise Foods and the City of Plant City.

Buntz and Water Quality Project biologist F. J. Waldinger of the Game & Fish Commission's Fisheries Research Laboratory, Eustis, began collecting data for the Air and Water Pollution Control Commission at the first report of the week-long fish kill.

ALSO IN January, tighter, self-imposed water pollution prevention regulations were announced by the Florida Phosphate Council.

Executive Director Homer E. Hooks, said the regulations were adopted unanimously as developed by the Air & Water Pollution Control Commission—ahead of Commission action—in an effort by the industry to prevent more accidental dam breaks such as have been experienced in years past, the worst occurring in March 1967 along the Peace River.

The 12 phosphate companies belonging to the Council operate in Polk, Hillsborough and Hamilton counties. They maintain hundreds of miles of impoundment structures holding water and mining by-products.

Daily inspections of active waste disposal pools for seepage and erosion, and more stringent engineering of new dams, are being required under the new regulations. ●

Photo By Gene Smith

Oil on water fouls boat hulls, kills fish and birdlife, creates a fire hazard and spoils natural beauty. Some of these damages cannot be expressed in dollars and cents. Clean water is priceless. This photo was taken last summer at St. Marks, Florida's Gulf coast, in a boat basin.

Bass Size

the making of fishing lures can be tricky and some "new" creations happen to be duplicates of those made and discontinued many years before

By CHARLES WATERMAN

NOW AND THEN someone asks me about his plans for going into the fishing tackle building business. My only qualification as an authority is that I go fishing, and I know about as much about the financial end as an aboriginal head hunter.

A number of Florida manufacturing concerns have been succesful in making tackle, and I have visited some of these plants and written about them. I never intended these written remarks as success stories. I simply wrote them because the products are of interest to fishermen. So having disqualified myself as an expert I'll now go ahead with learned statements on the subject.

The most common route into the business is a new type of lure. It appears to be a relatively simple item and with Florida's year round fishing there are several thousand fishermen who make lures for their own use if not for others. If a homemade lure works, the maker is likely to conclude it is revolutionary and visualize it as a road to riches. He at least has the first requirement. His baby catches fish.

Not all lures do. A lot of baits have been made as a result of an idea and with virtually no field testing. Obsessed with his idea the originator isn't about to be thwarted by a stupid fish that can't see its merits. He'll make this super-bait whether the fish grab it or not.

Eventually the thing must meet the test, or rather the fish, and you'd be surprised at how far it may have come by that time. I have watched a man test a pilot model of his new bait, find that everything in the box does a better job and still insist on going into production with it. I guess it's simply a refusal to admit he might be wrong.

So, suppose the new bait is a fish catcher, coming on the scene legitimately so to speak. Is it efficient in a wide variety of fishing situations or is it a specialty dingus, good only on a certain species at a certain time in a certain area? Maybe the maker experiments over a large part of the country and maybe he doesn't. Too often he decides that if the bass in the grassy pond back of the barn take it it's bound to work everywhere. There are local favorites that are never heard of outside their home county.

For example, suppose a Floridian built a bait for snook. If it wouldn't work on anything else he'd have eliminated 98% of his market to start with, as that fish is unheard of in most quarters and found in fishable quantities only locally.

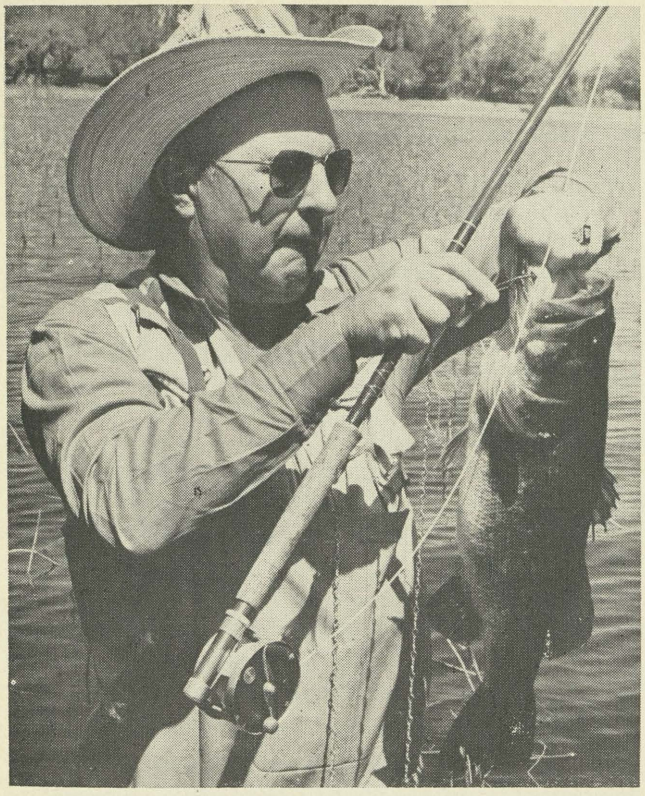
But if the new lure proves to be successful over a wide variety of situations the originator still has to do something about building it in quantity and at a profit. I have known some fine lures that were manufactured at a loss for long periods while someone tried to figure a way to make them earn money and some of them never made it.

Now there are some home workshops that produce lures, the whole family turning to on the project. Sometimes such a setup is succesful as a family concern but wouldn't work at all if outside labor were used. The family workers simply don't figure their time.

Then, there is this situation. The family can't keep up with the orders and someone has to decide whether to go "big" or back off. Here's a tough spot and what has been a simple matter of making something and receiving money for it can now become

(Continued on next page)

The flexible plug being bent here seems to be surprised what its own physique will stand. These plugs aren't exactly new "patterns," but the soft construction adds to their appeal.



Not far from where he hooked this good one the author could catch half-pound bass by the dozens but they don't all get this big, even after making it on through their first year.

(*Continued from preceding page*)

a matter of bookkeeping, labor relations and production.

And get this: After all these years and thousands of types of fishing lures, it's hard to get patent protection, and the truth is that what you're working on has probably been done before. If an amateur comes up with a good bait a big, established company may simply put a copy into production, turn on the national advertising and start distributing it. Before long the inventor will find that his brainchild is considered an imitation of the big company's product rather than an original idea. It has happened lots of times.

Some designs, especially in plugs, have been used by so many companies that their origin is lost. The darter plugs, for example, have been around for maybe 60 to 70 years (don't call me on that—I'm no historian) and have been made by dozens of companies. The "Original Creek Chub Darter" is the best known, of course, but I don't know whether it is "original" or not and probably the Creek Chub people don't either.

The South Bend Bass Orenos have been imitated for 50 years but I don't know who thought up the trough-nosed plug. Same goes for most of the other popular designs like Heddon's Vamp but, sooner or later, they're generally sold by the big name companies.

It's all a tricky business and I have seen some legitimate "new" creations that just happened to be near duplicates of lures made and discontinued many years before—not necessarily because they weren't good but because they didn't sell—or cost too much to make.

Once a design proves attractive to fish and fishermen it's production that really counts. Light jigs, commonly called "bucktails," for example, are cheaper to buy than they were 20 years ago simply because they are cast and lost in quantity, and hence built in fierce competition. I'd certainly hate to go into a small jig business with bowls of cut rate "bucktails" sitting on counters of nearly all big tackle shops. The same goes for plastic worms.

Anyway, you established manufacturers don't need to worry about me. I'm standing well back from *your* business.

ALONG WITH THE plastic and rubbery bottom baits comes a line of soft plugs that are otherwise fairly conventional in action.

Soft "natural feeling" plugs got off to a bad start with me because the first sample I tried had a bad habit of tangling in the line during casting and I tossed it aside without a thorough test. That fault had nothing to do with the material used. I bitterly noted that the "soft" plug promptly got a lot of remunerative publicity from writers who apparently didn't care whether it fouled in the line or not.

More recently I have been fooling with soft plugs that don't foul. They're the Burke Flex Plug offered by the Burke Flexo-Products Co., P. O. Box 348, Traverse City, Mich. The hooks are held to the eye by a chain which runs through the soft body.

What good is the flexible body? Well it feels like something alive. If a wild-eyed bass gloms one fast it probably wouldn't matter whether it was soft or not. If he took it gently he'd probably be encouraged to find it felt for real. The manufacturer stresses the fact that the plugs plop in a lifelike manner when they hit the water. Another feature I'll go along with is that the bendable plug is less likely to be thrown by the fish and he isn't apt to get leverage against the hook.

A PLENTITUDE of small bass in a lake or river doesn't necessarily mean there are going to be that many bigger fish next year, and really big fish the next.

In any water that can support large numbers, of course, the presence of lots of small ones is a good sign. The reverse might be true if there isn't enough food for more mature fish; then, you have the old story of crowded and stunted bass.

But the semi-dormancy of fish living under less than ideal conditions isn't fully understood by anyone, least of all the layman angler. Small bass that don't show at all when conditions are bad can be tearing up the place as things change to suit them.

In one section of the St. Johns River, fishermen were surprised last summer to find small bass striking everywhere when heavy rains came after a period of drought. Things had been so quiet they had no idea those fish were there, but the moving current brought them out. They were mostly fish weighing half a pound to a pound and a half. The current flow lasted on into the winter and in January we had good fishing for small bass using little spinners with maribou streamers on ultra light spinning rods. Nothing big but plenty of fish.

Most of these fish were about the same size, having hatched at the same time and the first impression is that there should be some super fishing in another year or two, bass that weigh a pound having surmounted most of the hazards of youth, and being big enough their parents aren't likely to eat them. But if water conditions deteriorate in that section of river I know from experience those fish will disappear—possibly not actually die or be eaten but simply stop taking my lures—and from the fisherman's viewpoint they might as well not be there at all.

They could be checked by electrical shocking and the most common verdict after such a project is that the fish are there whether they'll bite or not. I have my own theories about water current and fish presence (hasn't everyone?) and I think that when current stops in a river there is nothing to concentrate bass, and they disperse over miles of water until you just can't find them. When all current stops in a river the bait behaves without pattern and so do the fish. The shorelines, bars, eddies and current obstructions, so important when water is flowing briskly, have lost most of their attraction. And fish growth can be almost completely arrested by adverse conditions, even though the fish don't die.

Couple this to sluggish behavior that accompanies poor feeding conditions, low water and its accompanying concentration of pollutants and you have an answer of sorts. It's not conclusive but what fishing deduction is?

As I PERSPIRE over this immortal rhetoric I wonder how much sense it would make to someone just casually interested in fishing or maybe just reading it out of morbid curiosity. Do fishermen have such a jargon of their own that it is incomprehensible gobbledygook to strangers? Have I written this stuff so long that it's too far out for less depraved souls?

This attack of conscience comes from a clipping I have here on the old berry crate I use for a desk. I hacked it out of a sports page 'way back there on January 2, and it's about a football game, a bowl game of the day before.

I am only an occasional reader of athletic literature about specific contests, although I have always thought some of the most clever writing is found in sports editors' columns. In other words, comments about an interesting character in athletics or a discussion of trends in some sport interest me more than a play by play account of a game. So it's rare that I read a football game story right on through.

Well, I had special interest in this particular contest so I tried to read about it. I gave up half way through. The slang had become so far out and the whole thing was so hard to understand it just wasn't worth it. Some years back I had gotten similar lumps when I tried to read a London newspaper's account of a cricket match, but I set that down as my own ignorance since I didn't even know the object of the game.

But football is different. I know nothing of the technical end, but like most red-blooded American boys past 55 I have been exposed to a lot of football viewing since I was eleven, and this sportswriter was out of my depth. If I'm an average reader he's missed the boat—in fact he went down between it and the dock.

In my misspent youth I was a ninth rate professional wrestler of the depression days. Before that I tried it in high school and college. Last winter I watched some high school wrestling matches and found I couldn't even understand the rule book the coach gave me.

It is hard to learn advanced fishing, or advanced anything else, from most of the literature available. Either it's elementary or it's over your head. There seems to be no graduated transition. ●

Little bass like this are encouraging to fishermen and a lot of fun in themselves, but they aren't necessarily the harbingers of an equal number of "whoppers" yet to come.

The All-Purpose Fish

roundup of facts on a remarkable game fish—where Florida stands with the striped bass

A SUN-BRONZED Maine surf fisherman connects. He has hooked a powerful, hard-running fish that takes 40 minutes to subdue—a nice striped bass, or rockfish.

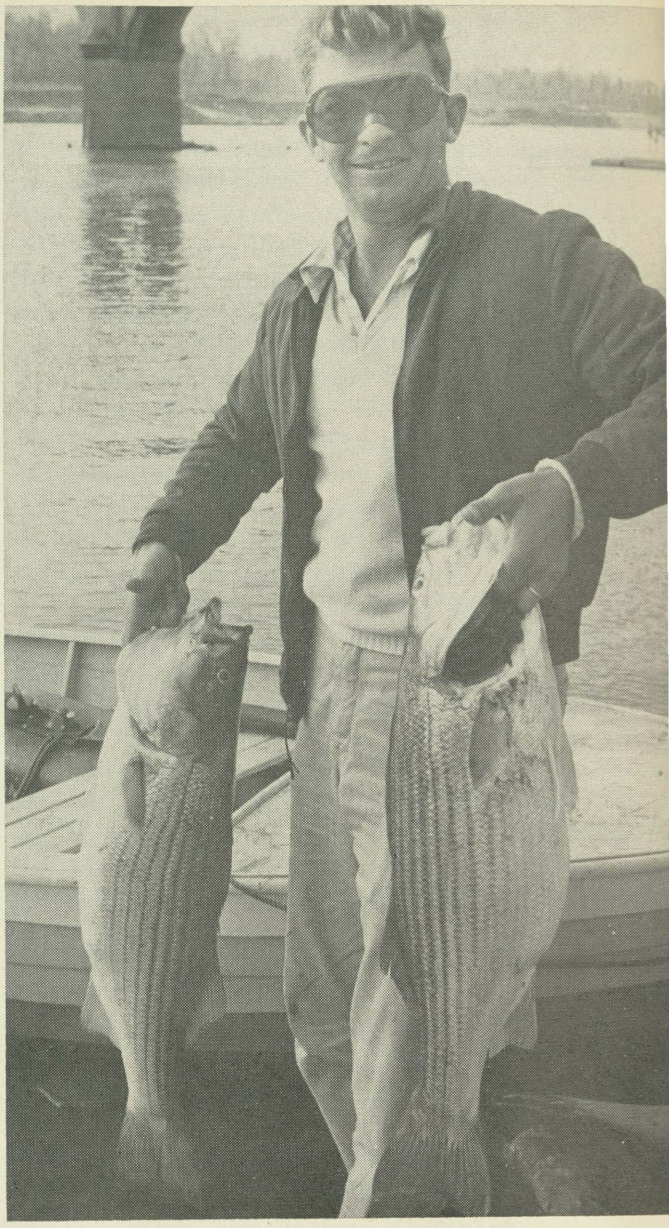
Nine hundred miles away, deep in Dixie, in a great manmade fresh water reservoir in South Carolina, another angler is after big stuff. He's casting cut bait on heavy tackle. He hauls back on a big, silvery fish and eventually brings it alongside his boat. Another hulking striper.

In Florida, at a place on the St. Johns River called Croaker Hole, a great spring of clear water issuing from the river floor, an old timer flips out a lure and sweeps the cave's rocky mouth. Something inhales the shiny bit of metal and heads for parts unknown. It's a big ol' "rock" and the angler knows it before he sees it.

Northwest of that scene by about 250 air miles, a fellow leans against a rail on a catwalk under a massive concrete dam and casts into the tumbling tailrace waters. His rebel yell when the fish strikes is all but muted by the thunderous noise of water roaring through cracked floodgates, but a crowd soon gathers anyway to watch him battle a 40-pounder. This is one form of striped bass fishing at Jim Woodruff Dam at the head of the Apalachicola River in the Florida panhandle.

Three thousand miles to the west, another lone surf fisherman wades patella deep into the blue Pacific and proffers a plug to the passing piscatorial parade. His lure is snatched by a long, line-sided, big-bellied fish whose ancestors were succesfully brought cross-continent by rail from New Jersey's Navesink River in 1879 to found what has developed into a virtual one-fish sport fishing industry. It is a striper, of course. (SPORTFISHING Magazine says ". . . probably more Californians fish for stripers than any other single species.")

Indeed, the striped bass, rockfish, rock bass, rock, or whatever you wish to call him, has made the rounds—and has made a lot of people happy in the process. From salt water to brackish water to strictly fresh water. Such versatility! And from a true sea bass by scientific classification!



F.S.N.B. Photo

How can one species provide so much sport in such diverse habitats? The only answer is that it's an all-purpose fish. The striper is one of those rare gifts of nature that can adapt to extremely opposed habitat types—even to the point of becoming limited to a fresh water environment for its entire life cycle under certain exacting conditions, "sea bass" or not!

The best *may* be yet to come. We *may* see catchable striped bass populations become quite common in certain inland lakes and reservoirs in Florida in a few more years—if the necessary research continues and the fry supply from a neighbor state, South Carolina, holds up.

Having "fresh water stripers" survive, even without reproducing, in shad-choked inland waters has been a dream of fishery managers for many years. Today the chances are better than ever that the dream *may* be coming true, as we'll see.

But there's trouble ahead . . . at the striper mill.

Revived plans for dam building in the famed Santee-Cooper's Congaree River would indirectly scuttle Florida's lake striper program. It all depends on whether or not the dam plans are carried to completion. This would destroy the big reservoir's *natural* striper reproduction, thus diverting future hatchery production toward replacing and maintaining a striper population on a put, grow and take basis—if it can be done. Florida and a lot of other states would be left out in the cold. Dead would be the goose that laid the golden eggs!

But before we get ahead of ourselves, let's look over our shoulder a minute. We need to know a little about the nature of this fish, which occurs naturally in Florida already, but not in great abundance.

If we can believe old time naturalists and other record-keepers among the early colonists and explorers of our continent, the striped bass in Atlantic coastal waters were once as thick as fleas, especially in rivers and bays, into which they could be seen moving every year, heading upstream to spawn.

This characteristic of its reproduction established that striped bass were in a group known scientifically as *anadromous* fishes, those which spend the majority of their life cycle in saline waters but regularly ascend fresh water streams to spawn. (The salmon is probably the best known example of an anadromous species. In Florida, the American, hickory and Alabama shad are others, as is the sturgeon.)

The natural range of the striper was eventually defined by observers as being from the St. Lawrence River, in Canada, all the way to Louisiana on the Gulf of Mexico. But, interestingly, there was—and is—a skip. No naturally occurring striped bass have ever been reported from the central or south Florida coasts or coastal streams—not from the Atlantic; not from the Gulf coast.

Obviously, then, northern Florida is on the extreme southern edge of the striper's natural range. Presumably, the striped bass of the Apalachicola and other Gulf coast streams were isolated from Atlantic coast stripers when the Florida peninsula rose from the sea after the last Ice Age.

As a point of interest, on the East Coast the most southerly natural occurrence we've heard of *outside the St. Johns River* was a single 2-pound specimen caught in 1949 and kept alive for some time in the exhibit tank at Marineland, below St. Augustine.

According to outdoor writer John Dillin's story about it in FLORIDA WILDLIFE, February 1950, the fish was caught in Long Creek, "deep in Flagler County." Long Creek is a tributary of the Matanzas River on the Intracoastal Waterway.

The southernmost range of the striper on the Gulf coast is the Suwannee River—and only a few have been caught in that stream. Gulf coast stripers are most populous in the Apalachicola River watershed, about 125 miles west of the Suwannee.

The striper has been reported from every major drainage on Florida's Gulf coast, though, from the Suwannee through the Perdido.

On both coasts, Florida's rockfish shun the sea and apparently shake their anadromous heritage. In all the biological studies of the species in this state—and it has been extensively investigated by

(*Continued on next page*)

Photo By Gene Smith

Striper fishermen below Jim Woodruff Dam at Chattahoochee, Florida use bank and boat. The catches may range from two to 50 pounds. The daily bag limit is six—of any size. Striped bass may only be taken with hook and line in Florida. This is NOT a commercial species.

By GENE SMITH

These fingerling stripers, left, were hatched in South Carolina. Here they are being released in Lake Hollingsworth in Polk County. The small one, at right, also from S. C. stock, was the first hook and line catch at Lake Talquin after June 1968 stocking. The big one was taken in the Apalachicola River—weighed 29½ pounds. Stripers generally live about 10 to 15 years.

(*Continued from preceding page*)

Game and Fresh Water Fish Commission biologists of years gone by—Dr. William M. McLane and James M. Barkuloo—no striped bass have been found to make coastal migrations. They have never been officially recorded beyond the various river mouths. So Florida's stripers can be considered fresh water races, although legally they are still classified as marine (salt water) species and under the jurisdiction of the Florida Board of Conservation.

This incongruous situation might be changed someday, and probably should be. Since we can't change the racial status of the striped bass in Florida, we'll probably have to bend the old guidelines that were drawn to include "anadromous" species on the salt water fish list forever. (Only in the last few years has the truth come out—that they aren't really anadromous in Florida; that there are, in fact, even different fresh water races of stripers as opposed to the truly anadromous varieties of Atlantic and Pacific coastal fame.)

A serious attempt was once made to extend the range of this great game fish southward in Florida.

Between 1960 and 1963, nearly 500 adult striped bass were stocked by the Commission, with the cooperation of the Martin County chapter of the Izaac Walton League, in the St. Lucie River, near Stuart. The fish were hauled from Maryland (Chesapeake Bay) and North Carolina (Albemarle Sound) in tank trucks.

A number of hook and line catches were later reported from the St. Lucie and adjoining waters. One striper was caught from the Atlantic Ocean off Stuart Beach! But biologist Jim Barkuloo, who headed the study and arranged the introduction, said in a 1967 report, "There is no evidence that these fish have spawned, although the river furnishes several of the known requirements for striped bass reproduction."

Far more promising, and deserving of far more interest around the country, is the present work with *landlocked* striped bass introductions—for sport fishing and shad control. The intense interest in this program, in Florida and elsewhere, has stemmed directly from the sudden availability of great numbers of hatchery-produced striped bass *from a fresh water race* in South Carolina.

For the sake of getting the whole picture, the reader should know that smallscale hatchery production of this species from anadromous stock is nothing new.

As far back as 1874 the striper was under study on the Roanoke River in North Carolina, according to the literature, and in 1880, at about the same time the striper went west, a successful hatch was obtained artificially from "ripe" brood fish netted from Albemarle Sound. In fact, North Carolina had the only striped bass hatchery in the world—at Weldon, on the Roanoke—before a startling striper revolution quietly took place at the Santee-Cooper Reservoir, which prompted construction of another famous striped bass research and hatchery facility in 1961. This was the South Carolina Wildlife Resources Department's hatchery at Moncks Corner, below Santee-Cooper—the hatchery that prompted the renovation and updating of all other striped bass hatcheries.

The revolution? Sometime after creation of the reservoir in 1941, the striped bass became, or, at least, was found to be, landlocked and reproducing therein! Though cut off from the sea they still spawned succesfully in tributary waters *above* the reservoir's upper lake.

Some scientists have postulated that the "anadromous" striper had become "functionally land-

locked" even before construction of the reservoir; that it had become an *endemic,* or naturally confined, fresh water population on its own. We'll never know.

A few stripers were caught in the Santee-Cooper all along after the locks were closed in '41, which didn't excite anybody since some fish would normally have been corralled by the structure. But around 1948-50 the new sport fishery had really picked up steam. The striped bass catches got bigger and more frequent. Young fish were coming on. Everybody began getting excited—biologists, fishermen, merchants and fishing camp/motel operators. The word spread like wildfire and brought anglers from far and wide to get in on the history-making fun. And they're still coming. You'd think "S. C." stands for "Santee-Cooper," not "South Carolina!"

Of course the state Wildlife Resources Department jumped into the striper business with both feet. There were myriads of questions to which answers were needed. In fact, in the words of Jefferson C. Fuller, Jr., Chief of Fisheries, "The entire 'book' had to be rewritten, chapter by chapter." Nobody in the world had ever known a landlocked, reproducing rockfish population could exist.

As the years passed the answers came.

Striped bass ate mayfly nymphs in the spring and *Clupeoid* fishes the rest of the time—gizzard shad, threadfin shad and herring, all extremely plentiful during the striper population build-up. They rarely fed on any gamefish species.

But when the supply of shad and herring was eventually reduced, the striper population in the reservoir began to decline—which brought about conditions for another build-up of the *Clupeoids.* It was—and is—a cyclic, natural phenomenon. The striped bass fishery is on the rise again today in the Santee-Cooper.

By this time an idea had swept the South and Southwest like a summer breeze. Many, many large, warmwater, fertile lakes and impoundments had an overabundance of shad species. Some fish populations were 70% shad by weight. There were so many shad in Florida that chemical renovation became a routine method for eliminating them. It was expensive; it was only good for temporary relief; it added to the fertility of the water, due to decaying fish flesh.

The shad-eating striper seemed an obvious solution to the problem. Stock enough adult stripers and they'll control the shad while furnishing fabulous fishing themselves, everybody thought. But it wasn't that simple, as every state that has pursued this course has found out, including Florida.

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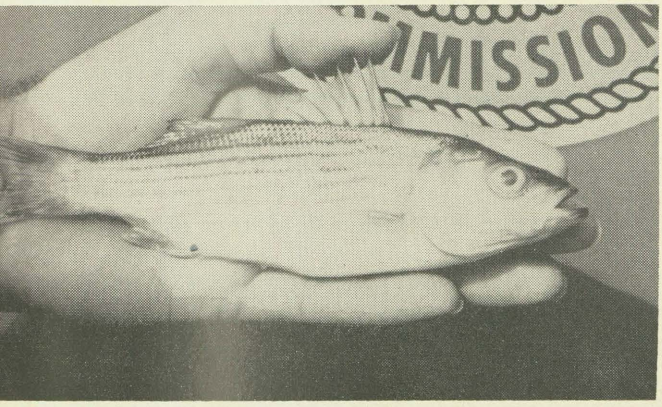


Photos By Gene Smith

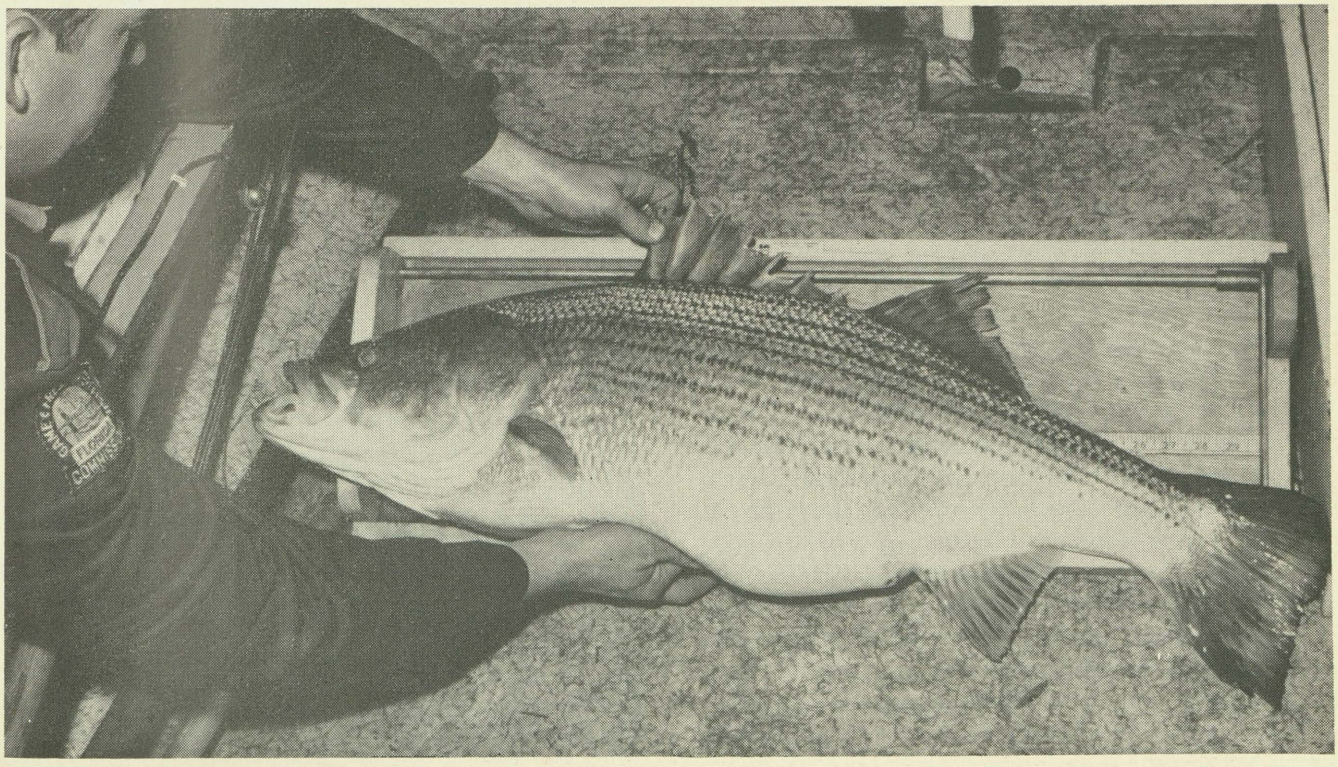


Photo By Jim Barkuloo

Stripers visit Silver Springs, above, via the St. Johns and Oklawaha rivers. Youngsters at right, below, were produced in S. C. from brood fish collected below Santee-Cooper Dam.

(*Continued from preceding page*)

Not enough adult stripers were available in the first place, and the few existing hatcheries couldn't capture enough brood fish at the right time to raise their own fingerlings from coastal stock on spawning runs. Too, adult fish stocked in lakes soon disappeared. And to complicate the matter further, stripers would not reproduce—*could not* reproduce—in just any body of water. They would have to be continually added to inland lakes if they were to do the job of shad control. Biologists learned that stripers can spawn successfully only in *moving* waters. The eggs are semi-buoyant and free-floating. Once laid and fertilized they *must* move along for a period of from 40 to 72 hours, depending on the water temperature, before they hatch. Then the resulting *larvae* must also be water-borne for another long stretch of river, for if they sink to the bottom they will die. After about a week the larvae become *fry* and the chances for survival are then greatly increased.

None of this delicate process was easy to simulate in a hatchery but it was done—and improved upon in one sense—by biologists at Moncks Corner, S. C. They borrowed an idea from a study in Alabama and began experimenting with injecting female striped bass with hormones to *induce* spawning. It worked, and a second revolution was underway.

Induced striped bass spawning and fry production, by what is now known as the jar culture method, was first accomplished by the South Carolina Wildlife Resources Department's fisheries personnel in 1961. This feat brought us to the threshold of great things in the field of fresh water fish management.

Today, some of the Moncks Corner production of the 1968 spawn is swimming in several Florida lakes—and surviving! They were hatched there, flown here, reared to fingerling size, then shipped to various selected bodies of water for release. In all, Florida got half a million fry, only a few days old, in April 1968. They went to Richloam Fish Hatchery, the Commission's modern facility in Sumter County, where they were hand-fed until June. Some went to Lake Talquin, near Tallahassee; some to Lake Underhill, at Orlando; and some are in Lake Hollingsworth, at Lakeland. All are in the 8-10 inch class now, *and eating shad!* It is the first known survival of striped bass in landlocked Florida waters. (Many introductions of small numbers of adult fish have been tried from time to time, the fish, when available, coming from commercial fishermen's nets. All failed to make the grade.)

Stripers hatched by the jar culture method, including some produced at Santee-Cooper, are also being tried in *coastal* waters in Florida! The U. S. Fish and Wildlife Service obtained over 100,000 fry from Moncks Corner in 1968, farmed them out to various federal fish hatcheries for rearing to fingerling size, and stocked them in the Choctawhatchee Bay in northwest Florida in June. Now, federal hatcheries are producing striper fry by the new method, using brood fish from various sources.

So this is about where we stand today—after nearly a century of striped bass study. If the "noble

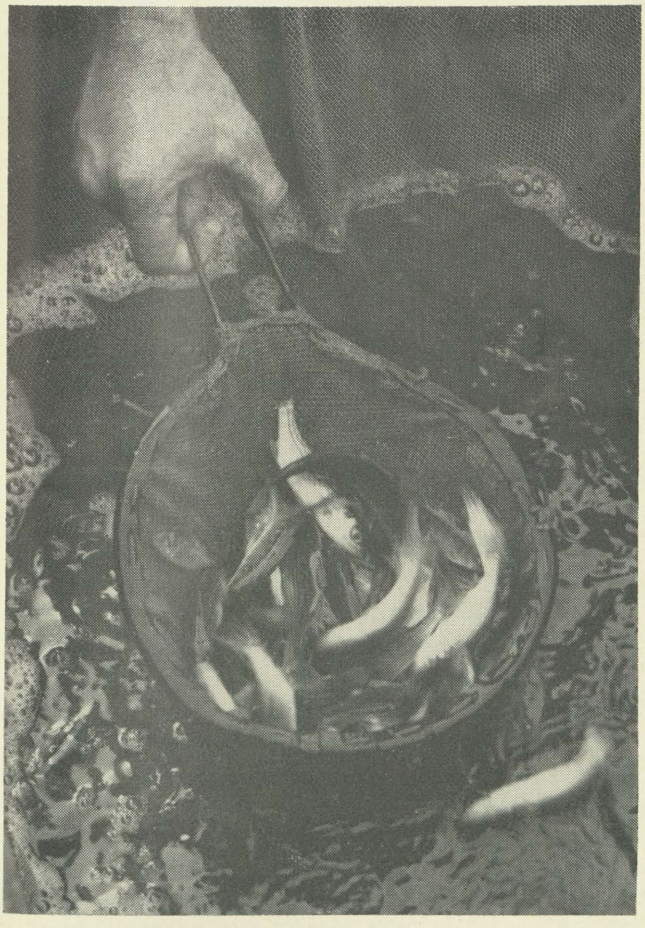
experiment" in lakes Talquin, Underhill, and Hollingsworth works, at least the following benefits should accrue:

(1) An entirely new, cash register-jangling sport fishery will have been created. (2) A natural control of overabundant gizzard and threadfin shad will have been found, which should improve fishing for bass and bream, as it does in Santee-Cooper, by reducing competition from the heretofore undesirable shad. And, (3) the striper program in Florida lakes would be on a safe, put-and-take basis. There would be no gambling with a runaway fish that could upset the ecological applecart. (Other than in a few impounded areas—like Lake Talquin, where successful striper spawning might occur, and where it would be highly desirable—no reproduction would be possible because of the absence of the aforementioned water flow, time, and distance requirements.)

Last year, Florida was only one of some 30 states that lined up for striped bass fry at Santee-Cooper, where some 100 million eggs were hatched successfully from April 1st to mid-May. Interest in the striped bass revolution is that great.

All interested states and other governmental agencies are now studying the hatching methods at Moncks Corner. Some have set up their own jar culture hatchery systems for striper fry production and others are pursuing the idea.

Photo By Gene Smith



But right now, with air travel to move them quickly and efficiently, the most economical source of striper fry—for those who have rearing facilities —is the S. C. Wildlife Resources Department. (Even the Soviet Union has received striped bass from Santee-Cooper—sent at the request of the U.S. State Department!)

A full Striped Bass Sub-Committee has been formed within the Southern Division of the American Fishery Society. It coordinates and sponsors various facets of the striped bass program. Its chairman is Jack D. Bayless, biologist in charge of the Moncks Corner Hatchery project.

Now, doesn't it seem ironic—even a bit unbelieveable—that today, after all these years of work and worry, struggle and study—and especially in view of the remarkable successes achieved in striped bass culture; doesn't it seem *inconceivable* that anyone would seriously suggest they chuck the whole business like an old cigar butt?

That's exactly what's happening as far as the Santee-Cooper striper fishery is concerned. The S. C. Wildlife Resources Department has said new efforts are being made to revive interest in the damming and straightening of the Congaree River to make it navigable for barge traffic, a move that would block the striped bass of the Santee-Cooper from reaching their spawning grounds. (A full 96% of all the unique landlocked striper population's spawning occurs in the Congaree.)

Even if some fish did reach the spawning grounds below the state capital, Columbia, the eggs couldn't possibly hatch due to the three pools of still water that would result from the proposed series of dams. Too, as drawn by the U. S. Corps of Engineers, the plan would rob the river of ten vital miles of egg-travel distance by the straightening of several natural bends in the river.

No one can say what the monetary value of the Santee-Cooper striped bass fishery is to South Carolina—but they're working on it. No one can even imagine what it has totalled since the reservoir was built. But somebody should be able to envision the wealth that will be lost in the future if the fishery is lost.

Similarly, nobody can calculate the dollars and cents value of the striper hatchery program to the many states which have benefitted directly from the work done there. And certainly nobody can guess what potential advances will have been prevented should the fish management profession be deprived of the only source of fresh water-acclimatized striped bass fry in all the world!

Somehow, a straightened river and a bunch of barge traffic seems a mighty little to get in return. After all, *most* river barge lading *could* go by rail. But nobody has yet figured out how to maintain good fishing anywhere other than in the precious water. ●

Photo By Wallace Hughes

habitat improvement

Part 2

included in potential productivity of all waters, forests and soils—when properly developed—is a great potential for abundant wildlife

YOU CAN USE land, and still have game—if you plan for it as a part of land use. Drainage is altogether different. You cannot possibly drain wetlands and still have the wildlife they produced: the waterfowl, muskrats, shorebirds and fish have gone down the drainage ditch with the water. Every water area that is drained is a total loss of a habitat and the wildlife it once supported. The statistics of drainage show what is happening to this important natural resource.

Originally we had 140,000,000 acres of swamp or marshland in the United States. Recent investigations by the U. S. Fish and Wildlife Service show we have about 76,000,000 left. Of this, only about 23,000,000 acres are of high or moderate quality for waterfowl, though most wetlands produce other kinds of wildlife, many of them abundantly.

About 4,500,000 acres of the 23,000,000 are the potholes, marshes and sloughs of the Dakotas and Minnesota. About 10% of the entire continental waterfowl population is produced in the waters of these three states alone—to say nothing of the other wildlife, from furbearers to pheasants, they support. Drainage of these areas is proceeding at an alarming rate: in the 12-year period 1943-1954 inclusive, nearly 1,000,000 acres were drained and lost to marsh wildlife production. The picture elsewhere is not more pleasant, as drainage continues to cut into the wetlands from the Everglades to Saskatchewan.

Of other wildlife, fish and furbearers are especially affected by drainage. It has been estimated that 95% of the American fur harvested is produced on wetlands. The fish-production value of these areas is incalculable, not only in terms of sport, but of economics. For example, the drainage of the great Mingo Swamp in Missouri was not only a costly agricultural mistake, but the destruction of so much rich wildlife land was otherwise economically unsound. A part of this swamp was restored by the Fish and Wildlife Service and the Missouri Conservation Commission and partly opened to hunting in fall of 1955; and to fishing in summer of 1956. The restored area not only served many sportsmen, but in less than a year, restoration of the wildlife use has resulted in the establishment of 15 new businesses within five miles of the area!

Many drainage projects were ill-advised. Some areas cost more to drain than they yielded in crops, to say nothing of the great loss in irreplaceable wildlife. Some do yield fair agricultural crops, but

Werner O. Nagel is a biologist of many years' experience in wildlife research and management. He is Senior Biologist in the Fish and Game Division, Missouri Conservation Commission, and the author of numerous technical and popular articles on wildlife conservation.

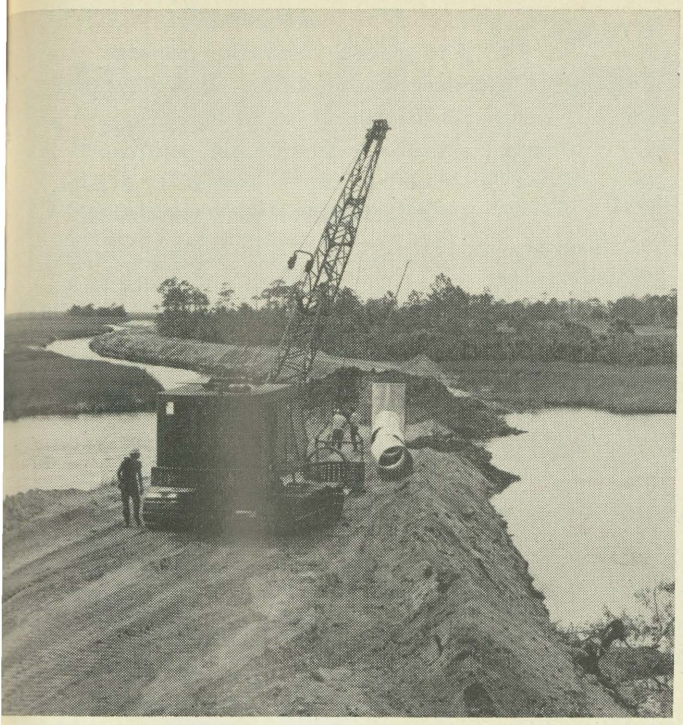


Photo By E. M. DeFoor

Destruction of natural habitat has caused great losses of wildlife. Waterfowl suffers most from wetland drainage, both on wintering and nesting grounds. Manmade impoundments can never replace the natural marshes and potholes of the north central U. S. and Canada now being drained. Quality of nesting areas is as critical as the quantity.

By WERNER O. NAGEL

on some of these both the cost of drainage and the profit in the crops are made "practical" only because of government subsidies. All in all, it is a confused, illogical picture in which we drain natural waters of high natural value to produce subsidized crops which we already have in surplus—while we find it necessary to subsidize the retirement of already-producing land—while we spend huge sums in creating new water areas at great cost—while we are already suffering from water shortage! It is not difficult to complete the picture: wildlife suffers, but much more than wildlife is at stake. When we unthinkingly plot the destruction of wildlife habitat, we are undermining the whole structure of natural resources which are the foundation of our entire economy and indeed, our very existence!

Fertility Decline—The Subtle Poison

ALONG WITH ACTUAL habitat destruction, a major factor limiting wildlife abundance is a decline in natural fertility of lands and waters, resulting in lower nutritional value of food. Fertility has declined mostly because man, in using land, has taken out more fertility than he and nature together have put back.

The value of food for any living creature is determined largely by its richness in nutrients—the proteins, vitamins and minerals needed to sustain life. The elements for these qualities in food come from the soil, and the plant can take from the soil only what is there to draw on. Thus infertile soils produce only plants of inferior food quality.

Wildlife responds definitely to soil fertility as reflected in the quality of food. The southern boundary of pheasant range is marked by a falling-off in mineral content of the soil. Deer in the more fertile areas of New York and Missouri grow larger, fawn earlier, and produce more fawns than the same deer on less fertile soils. Bass in fertile waters may reach two pounds in a single year; in infertile waters, they may never grow up. The examples are endless: together they prove that the kind of wildlife, its amount, and its health and reproductive vigor, are closely tied to the fertility of the soil or water where it lives. Conversely, a falling-off in fertility is closely tied in with a falling-off in wildlife kinds, abundance, and quality. In its effects on all life—human, domestic and wild—declining fertility is as deadly as a slow poison, for no life can thrive or long exist, without an adequate supply of the essentials of nutrition.

Short-Cuts and Cure-Alls

PREDATOR CONTROL, game laws and artificial propagation all originated as short-cut sure-cures for declining populations. Each in its hey-day was believed to be the royal road to game abundance: Why not? They were quick and easy to apply; they were direct approaches; they were easily understood, and they had a strong "let George do it" appeal. Thus when one didn't work as well as expected, the next natural step was to apply combinations of two or even all three.

But all of these had a fatal defect: neither singly nor all together could they supply the fundamental needs of wildlife habitat—food, cover, water and living space.

Game laws alone cannot give wildlife all the protection it needs. True, laws limit the number of quail or deer or trout a man may legally take; but bag limits and closed seasons cannot protect game from natural enemies, starvation, weather or disease. No law can produce a single additional quail or deer or trout. The function of game laws in regulating the harvest of game by man is a necessary part of management, but it is no more than that.

Like game laws, artificial propagation has a place in wildlife management and also its definite limitations. It can be used to stock new, suitable habitats

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with suitable fish and game; it may speed up re-establishment of wildlife wiped out by sudden disaster followed by habitat recovery, as after drought or flood. It is useful for supplying game or fish for special, limited purposes, like put-and-take hunting or fishing. But the one final limit on its usefulness is that it cannot establish game or fish of any species where the habitat will not support the wilder, much hardier native stock. And when habitat is improved, the wild native species will fill it to capacity much faster, at a lower cost, and with better game, than artificial propagation can ever do.

Predator control has its uses, too. Actually, there are two kinds of predator control: direct control, by killing predators; and control of damaging predation by increasing protection for the creatures you wish to safeguard.

Direct control by killing predators is a dangerous tool. It is justifiable only when predators are causing more damage than they are worth, and when the specific individual predator doing the damage can be identified and killed. Mass or indiscriminate warfare against a predator species, because some individuals are doing damage, is as inexcusable as indiscriminate killing of all dogs because one dog may have killed your chickens. Control of predation by selective killing is a job for specialists informed on the respective values involved.

Occasionally conditions may become unbalanced so that predators are too abundant in relation to their values. Then the population should be reduced either by liberalization in harvest regulations on protected species, or by special control measures. Many predators are also game or furbearers; and on such, adequate harvest is the most logical control.

Though we emphasize a few animals as "predators" that's just a personal viewpoint. Actually any kind of bird or mammal may be destructive when over-abundant or out of place, and the vegetation-eaters are most destructive of all. The very creatures maligned as "predators" are actually our lowest-cost insurance against these crop-destroyers. Only when they turn to destroying property themselves is it good business to "cancel this insurance" —and then only the destructive individual itself. Anything else will not profit us and, most often, can do us only harm.

Predator control by giving desired species added protection is another story altogether. For wildlife, this means improving protective game cover. This is effective: It permits enough predation to keep the game alert, and to weed out the sick or unfit that can't take advantage of the clover, and that shouldn't be allowed to live to spread disease or produce poor offspring. It safeguards the value of predators as killers of destructive rodents, as furbearers, and as game animals themselves. Meanwhile, because it is accomplished by habitat improvement, it actually helps increase game instead of just preserving it. This kind of predator control can be done by anyone who knows the cover requirements of wildlife.

This brings us right back where we started: habitat improvement is the only practicable key to game abundance. The other suggested methods are definitely limited and subordinate to the improvement of food, cover, water and living space. Habitat improvement is neither so easy, attractive, nor spectacular, but it has one advantage the others do not —it works!

Using The Key

JUST AS THERE ARE four notches to the habitat key, there are four elements in using it effectively. These are Research, to find the facts; Information, to make the facts known to those who must use them; Planning, to determine how the facts can most effectively be put into practice; and Coordination, to insure that the wildlife resource is properly considered in every major plan of land and water use.

Research: This means finding facts, according to timetested methods of insuring that the facts are reliable. Research eliminates guessing, faulty or incomplete observations, personal opinions, and hasty conclusions. Modern industry would no more think of operating without research than a contractor would think of building a house without a sound foundation. Research permits wildlife managers to build programs with the confidence that they are

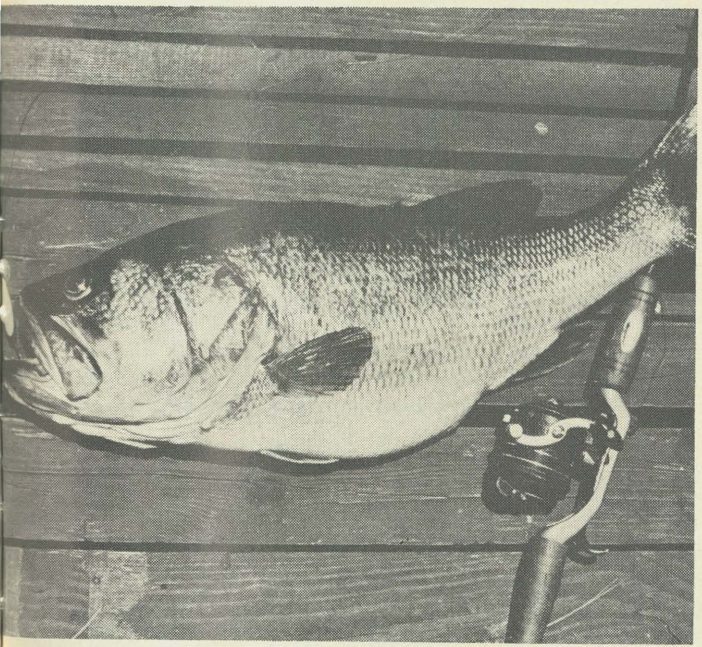
Photo By Lovett Williams

When we allow the unnecessary destruction of wildlife habitat we undermine the whole natural resource base; the foundation of our nation's economy and, indeed, of our very existence. Bulldozers have no brains. They—like other implements—are man-controlled.

High-growing variety of lespedeza, right, is excellent habitat improvement for quail. Often used in corner and border plantings, it provides both food and cover. Low-growing common lespedeza is suitable for use in pasture improvement programs. Both are perennials. Water fertility is an important factor in fish production. Too much or too little, though, is detrimental to fish.

Photo By Art Runnels

Photo By Wallace Hughes



based on a foundation of the best facts available. And, in a field where there are so many conflicting uses and desires and opinions, this basis of research and the confidence it inspires are especially important.

In wildlife management, research has many aspects—as many as there are kinds of wildlife, and variations in conditions under which wildlife lives. However, all these aspects can be grouped into a few main objectives:

To find all the details of life histories of each species, for clues to improved ways of meeting their needs.

To develop more accurate ways of measuring wildlife abundance-inventories, that will tell us how many of each species can be safely harvested.

To study the effects of various land uses and practices on each species, and find ways to overcome the limiting effects of these uses without interference with other major uses of the land.

To discover and appraise accurately more of the values of wildlife, so the wildlife resource can be given proper consideration in all programs of land use, as well as of wildlife use.

Research in the wildlife field is scarcely 25 years old. Enough facts have been already discovered, however, to revolutionize wildlife management. Meanwhile, there has also been a revolution in wildlife research itself: at first, researchers concentrated on studying the animal; now more and more attention is given the habitat, and the factors that affect its carrying capacity. Modern wildlife biologists dig into practically every phase of land use; into economics, government policies, and even psychology—anywhere there might be information useful for improving wildlife conditions.

But much more needs to be done. We have unmistakable evidence that soil fertility is necessary to wildlife welfare and abundance, but we need more facts on how this works and how to remedy soil deficiencies.

We need much more information on good wildlife food and cover plants that also have a practical farm use, so farmers will plant them, or let them grow as a part of good farm management.

We need more practical and accurate ways of measuring the wildlife crop, and the harvest, so we can encourage the maximum take while still safeguarding the breeding stock. Along with this, we need to study ways of increasing wildlife production.

We desperately need more information on the importance of wildlife—its tangible and intangible

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values—so it will be considered in plans of land use that affect wildlife.

Finally, in research, as well as in management, we must place more emphasis on habitat improvement not just in today's land use, but also in the light of probable land use in the future.

Perhaps the biggest need of all is for everyone who has anything to do with wildlife to realize the need for research to find the facts to do these things right.

Information: Probably the greatest weakness in present-day wildlife management is the slowness with which the facts uncovered by research get into use. Certainly only a fraction of the available wildlife knowledge is being put to large-scale use today. There are several reasons for this, but they all add up to inadequate flow of information from the source to the action program.

This is not the fault of any one group, or any one function: getting the facts into use is always a two-way job. They must be put out, in usable form, by those who have them; but they must also be sought for and used, by those who should use them. The defects in this process occur at both ends.

Gossip is no substitute for gospel in wildlife management information. There is great need for a steady, full flow of reliable information from the source of the facts to those who need the facts. Failure to take effective means to get this done will ultimately spell the failure of wildlife management programs.

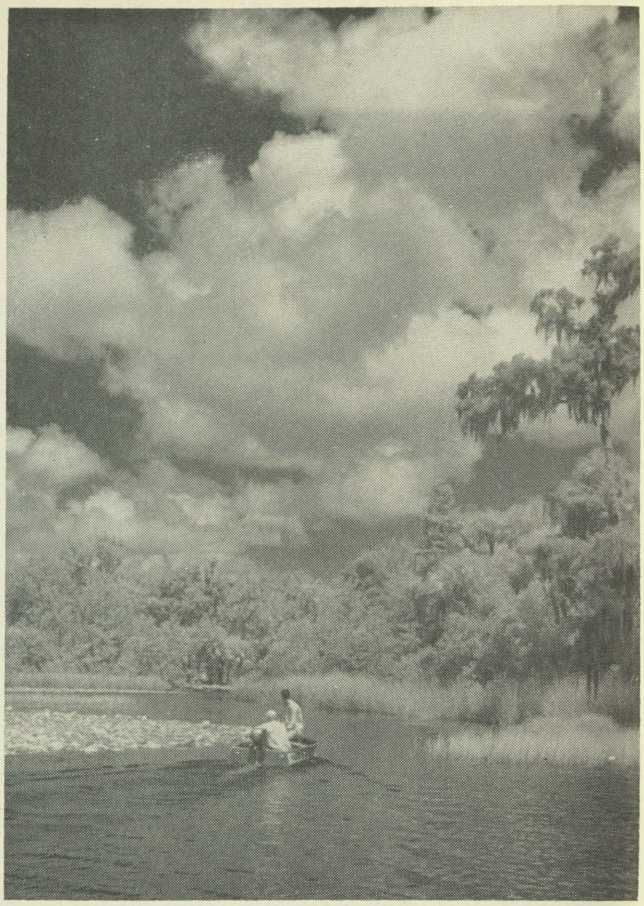
Planning: There are two kinds of problems in wildlife management: those of meeting the day-to-day and year-to-year needs; those of meeting future needs. Good planning must consider both.

Habitat improvement especially calls for long-range planning. It takes much longer to set in motion the machinery for restoring a marsh than it does to drain it. An industry may move onto a stream, pollute and kill the aquatic life in a year; it may take many years to work out ways by which that industry can operate profitably without polluting the stream.

The needs of the future—not just for wildlife, but for land and water and timber—in view of probable future human populations and demands must be considered. There is no value in improving wildlife habitat on an area today, when logic tells us that area will be needed for other purposes tomorrow. There is no value in planning habitat improvement for quail on land where the wisest use in the near future is forestry, and logic tells us we had better get ready for deer.

These and similar problems can be better prevented than cured; they can be prevented only by long-range advance planning, based on research.

Coordination: Whenever a program affects many interests, and is affected by them, it can be satisfactorily accomplished only by coordination of these interests. Since habitat improvement affects and is affected by every aspect of land and water use, it can be accomplished effectively only by coordination between all these phases.



F.S.N.B. Photo

A waterway, above, may be polluted and have most of its aquatic life killed in a year, but it may take many years of research to prevent such pollution. The habitat needs of the future—for wildlife and humans—can be preserved only through more research, right, coupled with wise-use planning. The land, below, can produce food, timber and wildlife—and remain beautiful with coordinated planning.

At this time, there is coordination between some land and water use interests but between others there is direct and destructive conflict. This is true in public agencies as well as in private affairs. We may see a public agency draining wetlands to uncover additional agricultural land (sometimes land of little agricultural value), while another government agency may flood good farmland for purposes which may or may not be economically sound. And, though both projects greatly affect wildlife habitat, neither may take this into account. We find contention between agencies that claim the same objective; we find financial support given with equal freedom to practices that conserve soil and to other practices that waste it; we find one agency protecting public reserves from commercialization while another encourages it. In short, we find many contradictions

we could well do without, and all too little of the coordination we need.

Wildlife values cannot, and should not, come before more urgent fundamental needs, in any program of land and water use. However, there is no program of land or water use that, from the viewpoint of long-term benefits, cannot be made more beneficial by planning for a proper balance of wildlife values. To obtain these added values, it is necessary to include appropriate provisions for wildlife in the plan. To secure the best balance of ALL values, it is necesary to coordinate all programs of land and water use with the overall picture in mind.

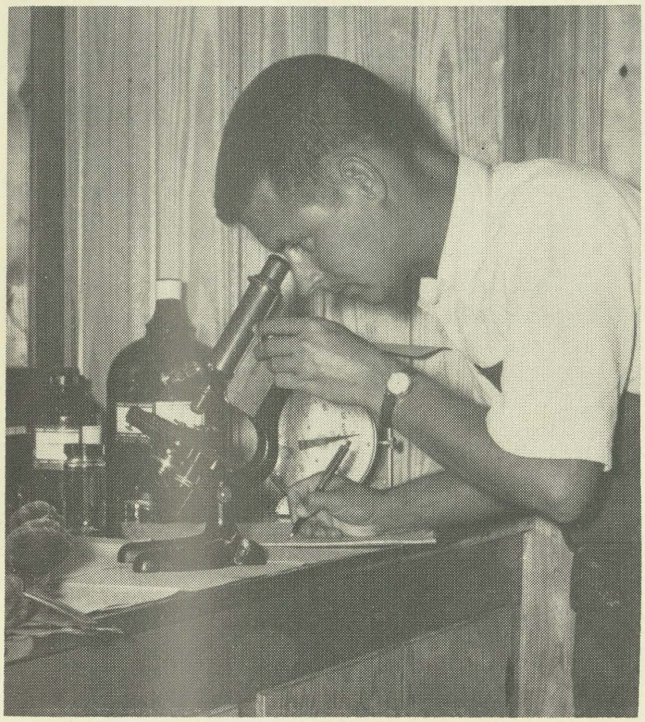
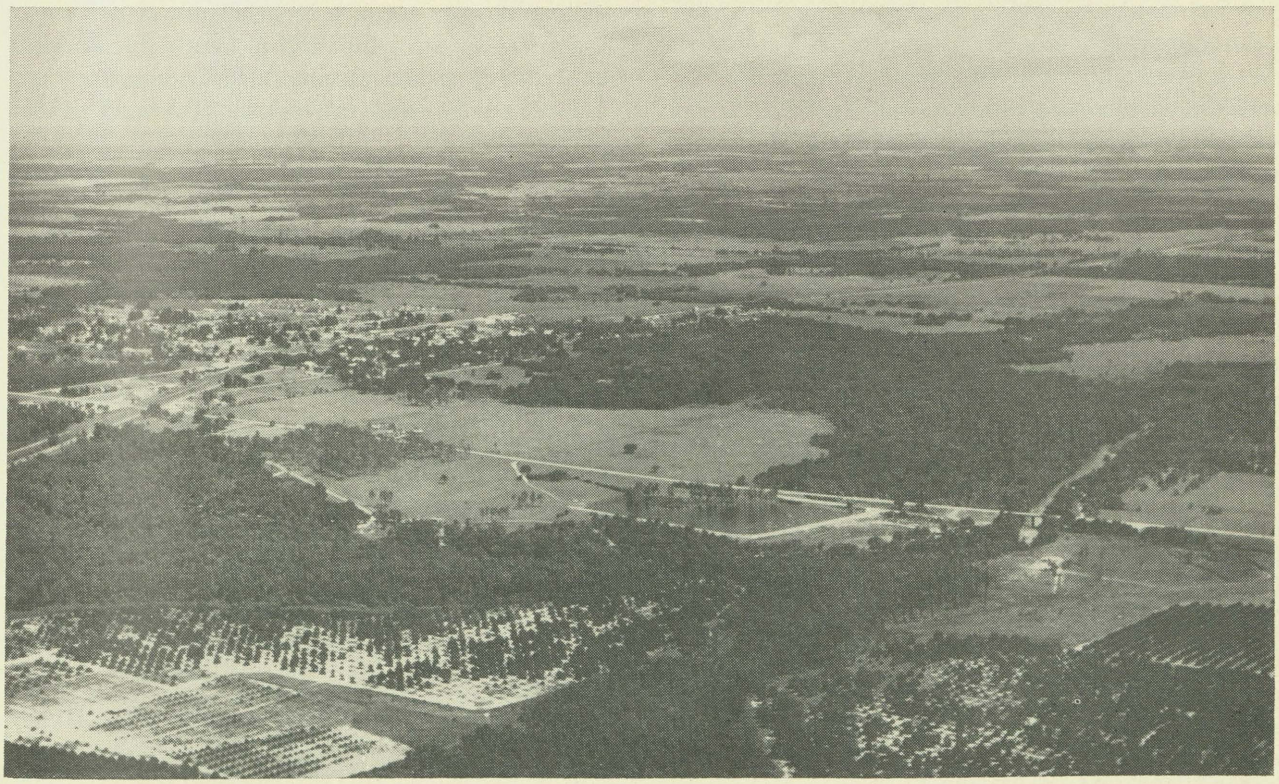


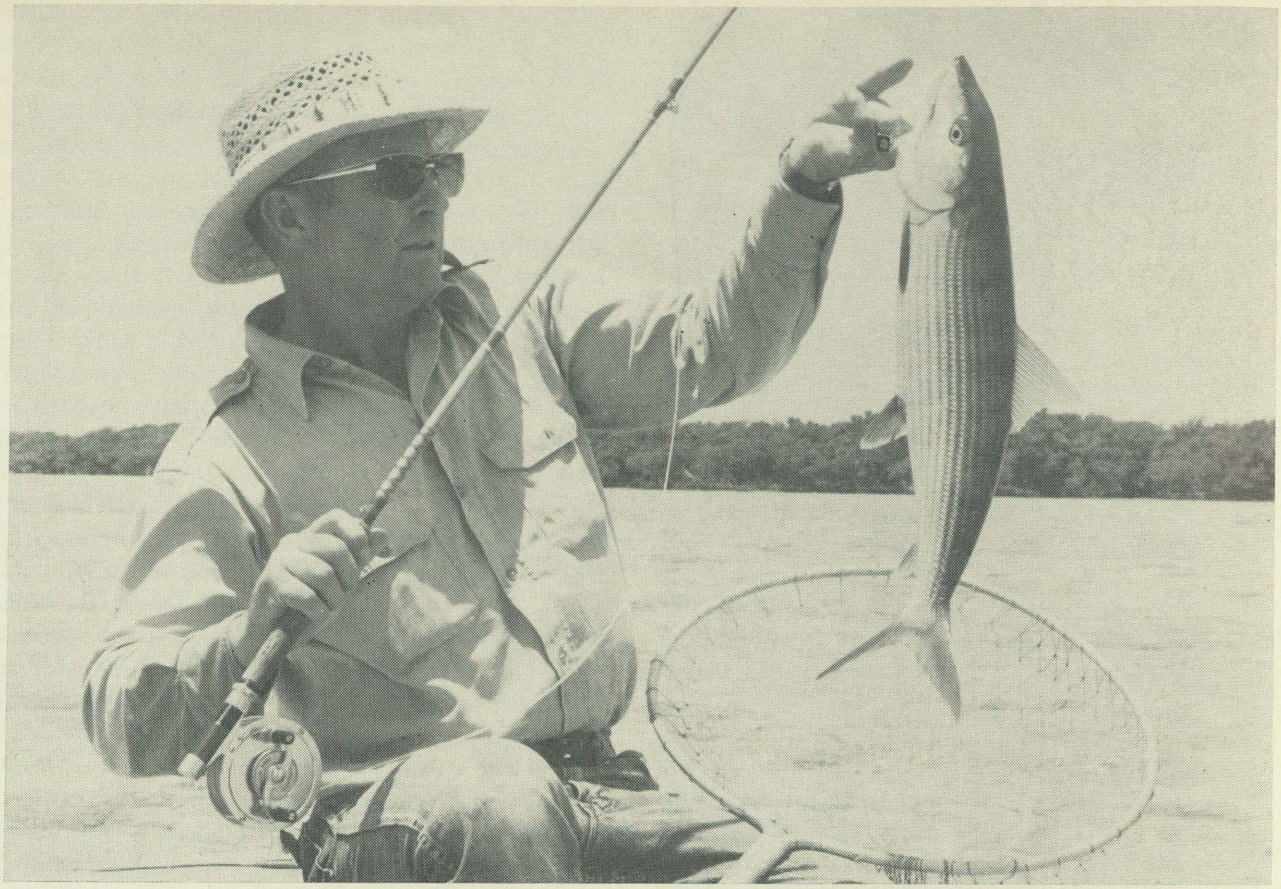
Photo By Bob Brantly

Coordination of so many interests demands a logical unit for planning and for development. A logical unit is a watershed, which comprises the major natural resources of the locality. The stream is the heart of the watershed, and it also reflects the use which is made of the soil, water, timber, and minerals in the watershed. These together make a natural working unit, where coordination in planning can best be carried out, and where the effects of such coordination can most readily be seen. The watershed also provides a natural unit for habitat improvement, carried on along with the improvement of soil, forests, and waters. Soil conservation requires the use of permanent vegetation in erosive areas, and this vegetation can be the kinds needed for wildlife food and cover. Soil and forest conservation reduce run-off and siltation, make more fertile, more stable waters, which support better crops of fish and other aquatic wildlife. All these things tie together to protect and improve all natural resources, including wildlife.

Only by coordinated planning, on a logical unit, with balanced consideration of all values, can ANY of these values be developed to their fullest potential. Included in this potential productivity of all our soils, forests and waters, when so developed, is a great potential for abundant wildlife. Habitat improvement, as a part of the overall development plan, is the key to this abundance. ●

Photo By Art Runnels





What's New in Fly Fishing

By CHARLES WATERMAN

YOU'RE PROBABLY pretty out-of-date on fly fishing. Almost everyone is.

It's a great place for fly rods but most Florida anglers get the word a little late because there aren't really very many serious fly flingers in the state. Oh, there are a lot of people who get out a long stick when the bluegills or warmouth are plopping, but most of the time they use something else.

These relaxed souls aren't responsible for advances in fly fishing techniques and equipment. The fly fishermen who keep the manufacturers scratching, and who work out the new ways of using flies, are a more unreasonable and sometimes slightly kooky breed.

Now a real fly fishing addict goes at the whole thing backward. His idea is that if a certain fish can be caught by some other method there must be a way to take it with flies. More normal souls would start with the fish that couldn't be caught on flies, and then find something that would work.

The fact a certain fish under certain conditions won't take his flies gets a real fly fan all worked up. Then somebody tells him he can't *make* it take flies and he gets a kind of spooky light in his eyes. This means he may spend a large chunk of his life finding a way to force that fish to take a fly. There may be nothing practical about his approach but he doesn't really count any catch that isn't made on hair or feathers.

Most of the things he comes up with are mainly for nuts like himself. Let's admit it and then get along to what's happening in the fly fishing business.

Although this sort of fellow may be just a little off his sprocket he is the one responsible for most of the developments in fly tackle and fly fishing methods, and some of the things that come out of his flailings will be so good that even the casual fisherman will adopt them. They can be better than the methods long considered logical.

The biggest new thing in fly casting is deep fishing—getting down to the levels once considered only for bait or bottom lures—and the main advance here is use of the true sinking fly line, made in a variety of densities. This sort of thing has been going on for decades and the sinking line is nothing new but the techniques have reached a high state of development, and in just the past four or five years a whole batch of fly fishermen have accepted the

sinking line, some of them violating vows of a few years back in which they said sinking lines weren't fly fishing and would never be used by top drawer anglers.

The true sinking line is something of a paradox in that manufacturers labored for several generations to develop a line that would truly float high on the water. It's easy to pick a high-floating line from the surface and cast with a minimum of effort and little or no false casting. The floating silk lines that required constant cleaning and doping have been replaced by materials needing less care and lasting much longer.

But sometimes the fish are 'way down there somewhere.

Properly used sinking lines have a lot of application in Florida. They make crappie fishing practical with small, flashy flies and they do a good job on black bass when you have to get something down further than the usual, unweighted streamer wants to go. I have found them almost a necessity in fly fishing for shad, and they often catch a lot of salt water trout. Offshore fishermen have clutched the fast sinking lines to their salt encrusted bosoms and dredge up everything from gray snappers to amberjack—fish that weren't even considered by fly fishermen a few years back.

Here's the dope on sinking fly lines. If you want to go in for this in a big way the shooting head is the best answer. In other words you buy a short "head" of sinking line, generally 30 feet or less, and connect it to a running section. When you false cast you use the sinking stuff, and then shoot the running line through your guides. A hundred feet is an easy cast with a little practice. Of course the head must be of the right weight for your rod the same as any fly line must match the stick; more of that later.

Now this form of casting was originated by tournament distance casters who used monofilament running line. Since they had plenty of room to coil it and it went further if it was small, they used pretty light material. When fishermen started using shooting line they found it best to go to heavier mono and most of them settled on about 20-pound test. Limp monofilament was better than stiff, of course, and there was much argument about what was the best brand. The argument continues and some line builders have introduced a special material that isn't mono at all but simply very light, floating fly line.

I like to use the special stuff better than mono most of the time. A hundred feet of it costs about six bucks but it lasts for a long time; for that matter, the sinking head is a long term proposition too. Now monofilament running line will get you more distance; I just don't like to handle it as well since there's more liklihood of tangling and it's very small to hold to.

Of course that short, shooting head doesn't have to be sinking line and there are some fishermen who use short "heads" for everything. Such a guy can be fishing his floating line with a bug for bass along a shoreline and then decide to try crappie in a deep hole. He just unfastens his floating head and ties a sinking head to his running line, coiling up the unused piece and securing it with pipe cleaners.

Although some of the best fly fishermen in the world use that method I'd rather have a "whole" line as a floater so I carry either two reels or an extra spool. One spool has the floater and the other has the sinker.

What about a "whole" line as a sinker? Nothing wrong with that except you won't be able to cast as far and it's a little more expensive.

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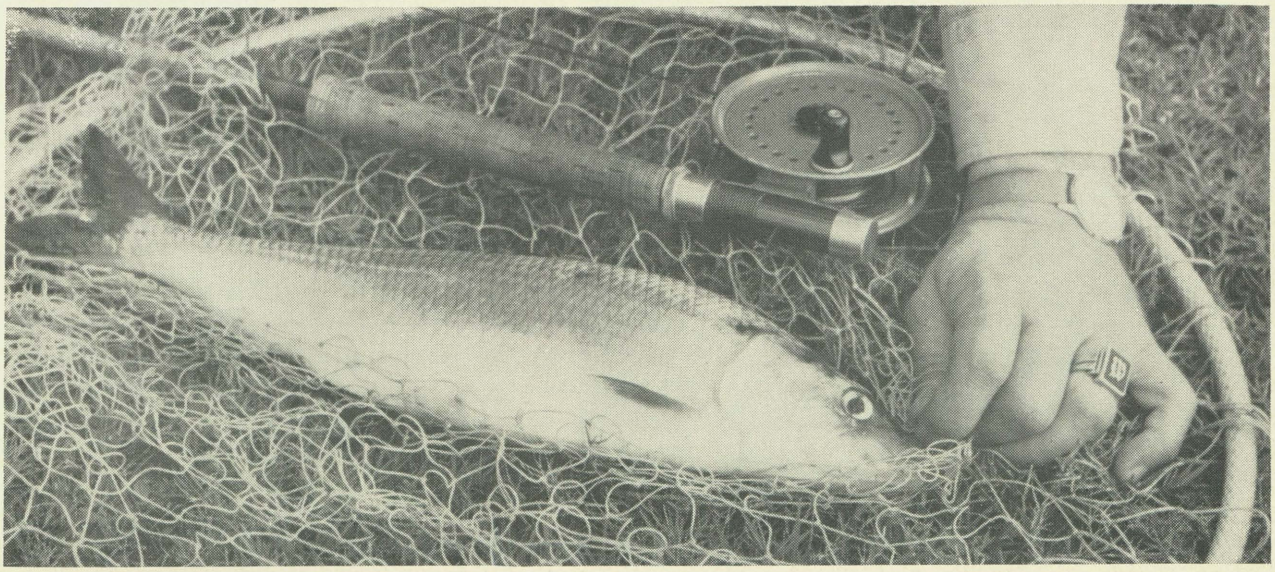

Highly developed reels with expensive drag are ideal for bonefish like this one, left, at Key Largo, but the "standard" fly tackle goes without drag except angler's finger. It is seldom that shad, below, can be caught on fly rod without a sinking line. This one was caught near Puzzle Lake on St. Johns River.

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There are fast sinking lines, slow sinking lines and *kind of* fast sinking lines; there are lines that sink at the tip and float further back. These gradations of sinkers are very helpful to trout and salmon fishermen but I believe the faster sinkers or "high-density" lines are practical for nearly all Florida use and will keep a complicated thing from getting worse.

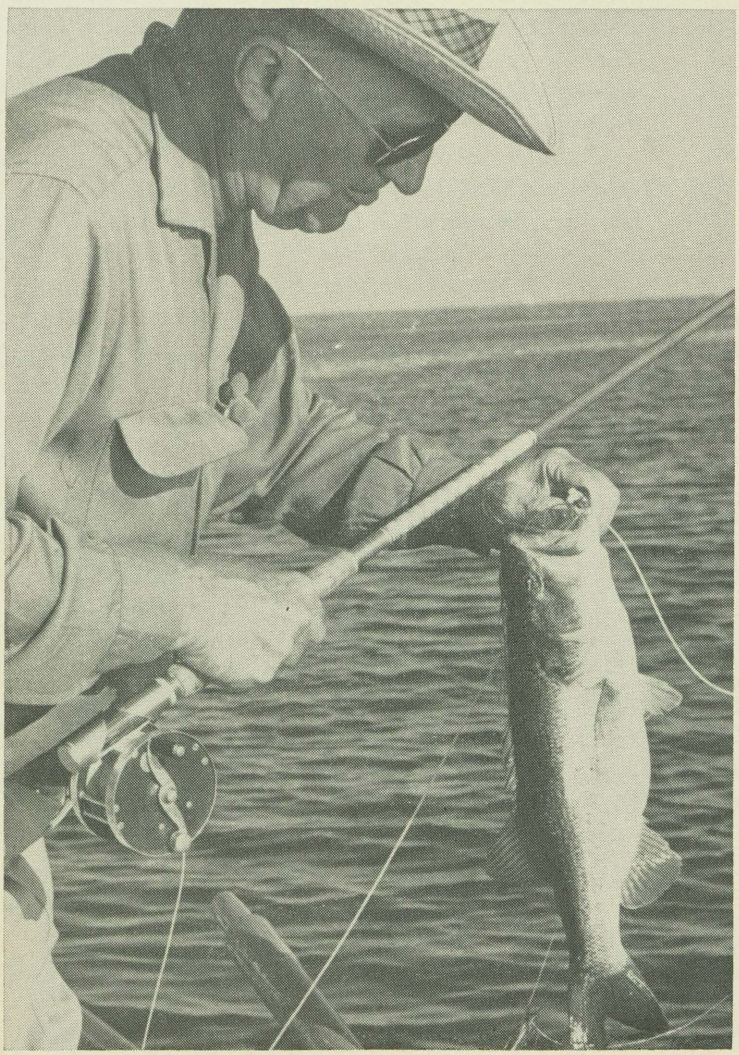
My first use of the sinking line in Florida was on St. Johns River shad and it worked best from a bank in a narrow section where there was plenty of room for backcasting. I beached the boat and walked the shore where there was quite a bit of current. I'd throw across it and let the fly swing down the way a steelhead fisherman does in a swift river. I confess I did better with a fly weight Cather spoon than I did with a true hair or feather fly but that was before mylar became so popular for fly fishing. With mylar glitter I think you can get along without the spoon and casting is easier.

My next sinking line effort was on salt water trout in the Everglades area, and I did pretty well when the fish were concentrated in deep holes during warm weather. I also gave the bluefish a workout in some deep canals and even racked up an 8-pound trout on the east coast near Flagler Beach one nippy day.

Last January I went over to Crystal River where Ray Donnersberger of Chicago had been working on trout in the deep holes. Donnersberger was named fly fisherman of the year by the National Fly Fishing Federation last fall and is an unmanageable combination of skill, enthusiasm and persistence with a frightening score of big fish in the record books.

I am not going into the selection of flies but Ray had decided the day-in, day-out choice for Crystal River was a white streamer with a section of mylar ahead of the feathers. He'd come to the conclusion after a lot of experimenting, and he'd found that the trout weren't so persnickity on color there as they have been in some places I've fished.

When I tried it with him the weather had gone warm and the fish had scattered a little but his method was producing pretty steadily. He was working in the same holes as the live bait and jig fisherman and was doing best on the low change of tide. He'd drift if the tide was moving slowly and anchor if it went too fast. He'd make a fairly long cast, let the fast sinking line take his fly down near



Weedless poppers or streamers are a help for fly fishermen when there's lots of vegetation. Jack Gowdy, left, got this one from Lake Okeechobee. When trout, right, prefer surface bugs and near-surface streamer flies, they really go for them. The fisherman is Milt Culp who caught these near Oak Hill on the Florida east coast. The weedless loop on streamer, below, is of the type used by Landmark Tackle Co., making their line of flies.

the bottom, and then retrieve in foot-long strips while it swung around with the current. He made sure he got it to the bottom, and hung up often enough to prove it. A short leader helps if you have trouble sinking the fly fast as the sinking line yanks it down.

In such a tidal river the trout are apt to be in the edges of eddies in cool weather—near but not in the fastest current. He was catching fish nearly every time out. Occasionally he'd beat the live bait fishermen and sometimes he'd get more fish than the jig anglers. The method is not revolutionary but it catches fish and real fly fishermen will be happy with it on salt water trout. Of course when these weakfish are feeding on the surface fly tackle is often the first choice, employing floating line and streamer or popper.

After the trout quit for the day, Donnersberger would switch to a floating line and go after the Crystal River black bass.

Now my experience with crappie (speckled perch) is that they'll take the fly on a sinking line all right but I can't say that it's as good as a jig on a light spinning rod.

Anyway, if you want to go all the way with fly fishing, try sinking lines.

Also in the line department is the very short, floating, weight forward taper as in the "salt water taper." This is a weight-forward line with the casting weight concentrated in a short area up near the front. It's advantages are that you can cast a fairly long line without much false casting and that you can manage a short, shoreline cast with little effort, only a few feet of your line being heavy enough to make the rod work. I've started using these short tapers for all bug fishing and for any shoreline casting. They aren't quite as good for extreme distance as a line with a longer heavy section but most of us would never notice the difference and there are a lot of advantages.

For a couple of centuries the reel was just something to hold extra fly line, but when fly tackle began to move into big game fishing it became necessary to play the fish on the reel, and there was a learned and dignified scramble to build really tough, large capacity fly reels with good drags. You can get them now, some being made in Florida at a cost of considerably more than $100 and they've been used to land everything from bream to swordfish.

Just recently someone started talking about "standard" fly tackle that doesn't employ any kind of a drag, and the word got out that the real ultra, ultra was to land a big fish on a fly reel without a drag at all.

At first some of the boys tried playing their fingers over the line on the spool, but that wasn't too satisfactory. There was always the probability of losing a fish and the possibility of losing a finger by fumbling. With most reels there's no place to lay your finger on the outside of the spool without getting rapped by the whirring handle if a bonefish heads for Yucatan. Well, anyway, they're now building some simple, single-action reels with the handle located to permit laying the finger alongside the spool as a brake. They won't cost as much as the fancy ones with the fine adjustments and look at the prestige of landing your fish with no brake!

For years I have been complaining that it's impossible to get a matched fly fishing outfit at most sporting goods stores. Too often there's no clerk present who knows a bug taper from a sand spike, and the procession of disillusioned buyers who find they can't fish with what they bought caused no end of worry among those who make their living building fly tackle.

The move to simplify things began with standardization of fly line sizes so the old designations gave way to the number system which you can learn about in any number of pamphlets and from a lot of dealers. At first all of us old fogies squalled because we couldn't remember the simple numbers as well as the complicated letter system, but we finally came around and the numbers are better.

So now the manufacturers are beginning to put the line number on their rods and you can select the right line, even if the clerk just ran over from the cosmetics counter. That still doesn't solve all

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The author nets a salt water trout for Ray Donnersberger at Crystal River, along Florida's west coast. Caught in cooler weather these fish were hanging out in deep holes and were taken on with sinking lines and streamer flies.

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of your problems and your quest for a balanced outfit is made more simple by a growing move to selling ready-matched gear. One big firm is making "systems," simply a good term for a fly casting rig that includes all of the essentials.

Don't confuse the systems with cheap "fishing outfits" that include everything from a stringer to the baits somebody couldn't sell. Those good fly fishing outfits include a rod, reel and line and let you pluck what feathers you prefer elsewhere. The people who put them together do so with a lot of perspiration and soul searching, and they want you to like them because they want you converted to fly fishing, and they want you to stay converted. For the most part these balanced fly outfits are in the higher price brackets.

More and more fly fishermen are tying their own flies and with the commercial product getting expensive that's understandable. I've seen a couple of things on the market that are different enough to make the "new" list. The monofilament loops put out by Landmark Tackle Co., 511 Santa Barbara Avenue, Fullerton, Calif., 92632, are a painless way of getting a weedless fly, either by buying the fly direct or by getting the monofilament strips and tying them on yourself.

There's an improvement in the popping bugs on the market and at the prices they bring there should be. However, a popping bug takes some hand operations almost any way it's put together so I won't complain.

For one thing, most of the poppers nowadays have hooks large enough to extend far enough away from the body to stick a fish. For years the popper builders tended to build big bodies and use tiny hooks that were both weedless and fishless.

The hair bug or "powder puff" has long been a favorite bass bug of mine. It's simply a deer hair imitation of a mouse, or something almost like a mouse. It's fuzzy and a little tricky to tie so we won't go into home construction. Anyway, it can be made very nearly weedless and can be fished by gentle twitches, loud plops or steady retrieve. I've had best luck with these things on fairly calm water.

You can dope one of these floaters so it sits up high on the water, and most of them are built in the full mouse format, sometimes with tail and ears.

I can get by without the ears but I like an abbreviated model made by J. M. Stott, P.O. Box 971, Kissimmee, Florida 32741. He makes his hair body short and chopped off square at the stern so it will pop loudly if you jerk hard. He puts on a little rubber tail and the gadget catches fish. It casts well, better than most of those we've made.

These deer hair floaters have been made in many colors. Larry Green of California writes about an especially fancy version that does a fine job on that coast. The white deer hair floater used to be Number One choice for smallmouth bass in Michigan.

The bug made by Mr. Stott is natural deer hair and most of those I have used in Florida are natural hair too. He calls his the Tiger Mouse.

Don't forget to investigate the mylar business too. Lefty Kreh, manager of the Miami Metropolitan Fishing Tournament, has been boosting mylar fly construction for years, and there's a streamer made by the Phillips Fly and Tackle Company, Alexandria, Pennsylvania 16611, under Lefty's name.

I've been called a reactionary if I fish with fly tackle when something else would work better but there's sometimes something new, even in whoosh, whoosh circles. ●

The Human Lemmings

By ERNEST SWIFT
National Wildlife Federation

I ONCE HEARD an observation to the effect that the early summer migration of tourists erupting from their winter confinements could be likened to that of the lemmings; the difference being, however, that the tourists eventually expected to return home, while the lemmings continued to the sea and their own destruction.

In many respects the modern tourist is reacting to a long established American tradition of being footloose and free to search for new freedoms over the next horizon, hill or mountain. After nearly four hundred years it would appear that certain migration and freedom instincts have become so deep rooted that in spite of curtailments resulting from the impact of people and a super-civilization, the freedom urge continues to crop out in directions not anticipated. Being a tourist is the latest.

Living and social patterns have changed greatly in those four hundred years. No longer able to homestead or pre-empt virgin prairie or timber lands, or commercially kill bison and beaver, or set forest fires with impunity, or divert streams without permission, or tear up prairie sod and create dust bowls, they are now taking the profits of both good and bad resource husbandry and becoming gypsies in fancy trailers and cars.

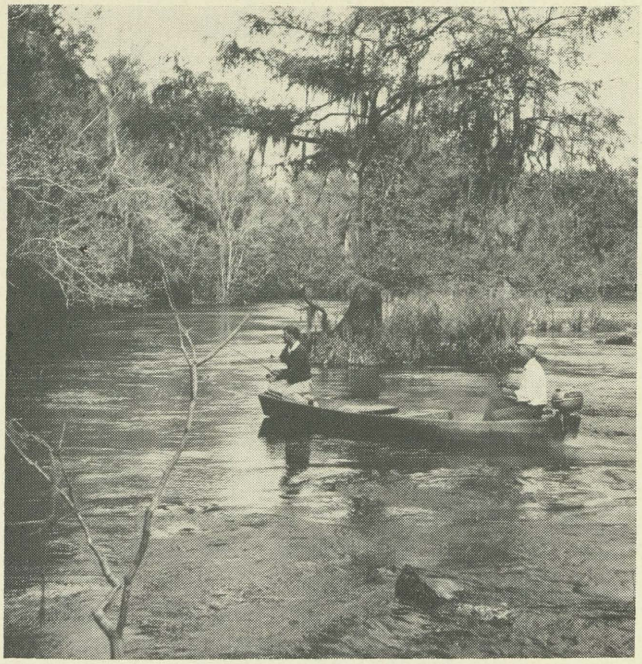
Looking back historically it would seem that every reform dealing with resources and land husbandry has been resisted by some segment of citizens, tooth and nail, and in most instances someone has risen up with great indignation and stated that his constitutional rights are being infringed.

Tourism and outdoor recreation appear to be the last freedom frontier of the human lemmings, and these exercises are being drastically circumscribed since the first deer was killed by white invaders.

But now comes an added note of rumor and alarm. The National Parks, those vast natural areas of sublime grandeur are being slowly tramped to death by too many people. And the question has been under debate for some years as to the justification of limiting their use and allowing some portions to "come back" by prohibiting no use at all for a specified time. This horrid thought immediately raises the hue and cry of Constitutional Rights.

Again in brief review: Population increases are always followed by restrictions of all kinds. This is true under natural conditions and much more volatile in human behavior. There is an inborn stubbornness to resist or evade any new strictures, especially new innovations that circumscribe human behavior.

Even in pre-revolutionary times the colonists found it necessary to forbid forest burning in certain seasons, and some rudimentary game laws were invoked. People escaped these by moving west. The early westering migrants were impatient of any restrictions and grew more intolerant as they traveled beyond the reaches of constituted law.



Outdoor recreation is the last great freedom frontier of the masses. Despite past giveaways and the despoilment of natural resources, there is still ample public domain to assure elbow room for our retreat from the workaday world. Will we save it?

For individuals or small groups on their own, existence at best was harsh and necessitated taking what was at hand from the land. As a result living patterns grew into inflexible traditions and mental road-blocks which even today are hard to change. The tourist with a fancy trailer wants to envision himself as an uncurried mountain man.

The so-called right of discovery and the right to use was expanded to the right of possession and ultimately, the right to destroy. Mountain men destroyed the beaver, market hunters the bison, settlers squatted on unalloted lands and loggers moonlighted timber. Their predatory habits were eulogized as virtues and by a tortured interpretation of the term constitutional rights.

By the end of the Civil War, lands along the eastern seaboard were wearing out; the "inexhaustible" timber supplies were rapidly declining and bold loggers were invading the Great Lakes states.

A germ of conscience began to emerge in the 1890's and early 1900's. Forest Reserves and National Forests were set aside from the public domain, but not without much caterwauling about constitutional rights. The states enacted more stringent game laws and made hunters buy licenses; but this was not without much grumbling and denunciation. The first efforts to protect outstanding natural scenic areas were also unpopular, as was the Fed-

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eral government assuming jurisdiction over migratory waterfowl. The Federal treaty powers had to be invoked to establish constitutionality. The control of public grazing lands was a long drawn-out dog fight that is still not settled.

To some the creation of local and state governments was a grudging concession that increasing populations were in need of social and civic rules to keep them in bounds. The old western rustler and outlaw was a manifestation of rebellion against an advancing civilization.

Eventually a laissez-faire giveaway program had to be reversed and submitted to planning. Now we have more urban and city bred people than those with a country tradition, and they have not learned that it is imperative to live within the structure which they have imposed on themselves, nor the limits of the resources. They still have not learned that technologies are no substitute for an intelligent code of ethics.

For many years now there has been a struggle to place limits on MANS' use of resources simply for his own preservation. MANS' instincts to nature have been difficult to overcome, but because of fear and necessity some advancements have been made.

This latest manifestation of rebellion has been against any more regimentation on National Parks and Forests by limiting the numbers who can enter at one time. This is another traditional throw-back.

MAN has now learned that he can only endure his organized confinement for so long, and about the last place left for a retreat with any elbow room is on state and Federal public domain. It is hoped that there will be enough human intelligence to save these last symbols of original Americana before they become outdoor slums. However, some will claim their constitutional rights are being curtailed. ●

Boycott Not Solution

By JOHN MARSMAN, Savage Arms

SHOOTING-SPORTSMEN may not realize it, but the success of antigun forces in adding new firearms restrictions to federal and state lawbooks during the past year has prompted a new cohesiveness among shooters.

Caught in the vise of tightening restrictions, shooters throughout the country have banded together for unity and strength to fight the threat. Gun owners, who heretofore had been complacent about it all, are now actively engaged in organized campaigns aimed at stemming the tide of undesirable gun laws.

The mass movement against the antigun craze is not entirely free of emotion. Shooters should be emotionally upset about the inroads being made to curb their shooting freedom. However, it is important that emotion gives way to reason and logic if the counterattack is to be successful.

Some of the measures being proposed are commendable. One calls for closer contact between sportsmen and legislators on the local level so the lawmakers are informed of the sportsman's position concerning gun laws and gun use.

Also, special communications networks are being set up to maintain a constant flow of accurate information to lawmakers, to alert fellow sportsmen in times of emergency, to start organized action relating to pending legislation, and to move, where necessary, toward repealing or amending existing laws. In some areas, part of this otherwise sound approach has been the boycott proposal, a defensive tactic of dubious value. However, the alarming aspect of this plan is the target its proponents have selected—the state fish and game agency!

How a sportsman's boycott of hunting licenses and other related permits is going to convince legislators that passing restrictive gun laws is not the thing to do has yet to be explained. Who will suffer in the end if sportsmen refrain from buying licenses? The sportsman, no one else.

In the first place, state fish and game agencies have been opposed to unfair gun restrictions, so why direct retaliatory action toward them?

Secondly, many such agencies are supported solely by revenue received from the sale of hunting and fishing licenses. Others are supplemented with general funds. Cut off license fee revenue, or reduce it in any way, and you cripple the fish and wildlife management programs sportsmen depend on for their outdoor sporting pleasure.

There is no connection between the tax money of the general public and fish and game expenditures in states where such agencies are self-supporting. Even in states where tax money is used to supplement sportsman revenue the results of a boycott would penalize the sportsman first.

What purpose would a boycott of the federal waterfowl stamp serve? Only one. It would reduce drastically the yearly revenue, and thus the wetlands projects that benefit the sportsman.

Finally, for sportsmen to undertake this form of protest would be to play into the hands of the opposition. The claim among those who would abolish the right to own and use firearms lawfully has been that the shooting sports are diminishing rapidly in popularity, that hunting, indeed, is an antiquated form of outdoor activity.

Refusing to purchase hunting licenses would provide the statistical proof needed to substantiate what is now an unfounded premise.

In short, shooting-sportsmen need to guard against using the kind of emotionalism and illogic their adversaries have employed. A boycott, such as has been proposed, is predicated on pure emotionalism. It lacks logic and should be defeated by shooting sportsmen whenever it's advocated. ●

Gun News

hunters will probably never learn everything about guns no matter how expert they may become as years of knowledge and experience pass

By EDMUND McLAURIN

YOU CANNOT learn to shoot expertly solely by reading a book, but you can learn a lot about shooting by reading of the trials and errors of others. However considered, you benefit.

No matter how expert he may become as the years pass and add experience and knowledge, no shooter ever gets to know everything about guns. Also, there is always something new to rekindle interest and inflame the imagination.

Back when I was a kid in grammar school one of the textbooks of the period was *Dodge's Comparative Geography*. Actually, it was a useful book of its own merit, but more practically for me its opened covers were large enough in size to hide any new gun catalog or outdoor magazine of the time.

During prescribed study periods, I'd prop the opened geography book in front of me, and behind its concealing covers enjoy the latest gun catalog of any of a number of different manufacturers, or avidly peruse the pages of a new issue of *Field & Stream, Hunting & Fishing, National Sportsman* and, of course, *The American Rifleman.* I knew exactly when to wisely turn the opened geography book face down on the desk and pretend to momentarily reflect or make notes, and when I could expect to continue reading without arousing teacher suspicion or being detected.

There wasn't a gun model or cartridge then in commercial production that I didn't know about. I could quote their described features and ballistics far more accurately than their commercial retailers.

In those days, the late Colonel Townsend Whelen, Captain E. C. Crossman, Captain Paul Curtis, Bob Nichols, Major Charles Askins, Sr., and Major General Julian S. Hatcher were among the most popular and widely read firearms authorities. The National Rifle Association was in the Woodward Building in Washington; C. Stewart Comeaux was the busy Secretary of Sporting Arms and Ammunition Manufacturers' Institute; E. Field White was toying with the Poly-Choke control device and Colonel Cutts was doing similar research work for the Lyman Gun Sight Company.

It was also the heyday of new Tarzan Books by Edgar Rice Burroughs, and of the first movie Tarzan, Elmo Lincoln. Tom Swift books appeared with changed titles, but little changed themes. Issues of the popular youth magazines of the time, *The American Boy* and *Boy's Life* duly arrived on time each month and were eagerly devoured.

As might be expected, I wrote some of my author-heroes of the time, and—probably because they detected an almost born love of firearms and good writing—they kindly took time to write me letters of advice and encouragement.

In later years, several took me under wing and saw that I received direct benefit of their technical knowledge and did a little writing on my own.

The American Boy and *Boy's Life* were among first purchasers of my magazine material, created and sold while I was still in high school.

H. G. Tappy, then editor of *Hunting & Fishing,* bought my first fishing story and encouraged me by asking for more. Another editor idol, Dave Newell, took a couple.

About the same time I began writing Sunday supplement illustrated feature newspaper articles for certain of the Hearst publications, and undertook an outdoor column on the same local newspaper where a younger contemporary, David Brinkley, got his start.

Many a Saturday night I phoned the afternoon's local shooting match results to David on City Desk. (He was smart then; he's still smart. If any man ever deserved success, he does; he earned it the hard way. I am glad to be able to say that I was among David's first newspaper friends and those privileged to first know the now famous Brinkley smile and analytical wit.)

The boyhood reading habit has stayed with me. I can seldom sit for long without reaching for a magazine or book. Sometimes this habit constitutes a form of rudeness, because when I reach for magazine or book, it is a sure sign that I am only mildly interested in current conversation or proceedings.

I sorely miss the writings of the late Colonel Townsend Whelen, Captain E. C. Crossman, Bob Nichols, Nash Buckingham, and—in more recent years—the magazine stories of the late Havilah Babcock. Their love for and technical knowledge of sporting firearms was reflected in their writings,

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to shared benefit. All were considered top authorities in their subjects.

Any text authored by the late Colonel Townsend Whelen, a lover of fine guns and shooting sports, is sure to be interesting, easily understood reading and a pride to own.

At the time of his death, Colonel Whelen was putting into final form the draft of a new book—one which was very close to being finished. Bradford Angier, himself a writer and Whelen family friend, saw the Colonel's last literary efforts to publication. The result, *Mister Rifleman,* is a most entertaining volume, one filled with the Colonel's personal hunting and rifle range experiences. I wouldn't take $20 for my copy.

Fortunately, we still have a living galaxy of firearms experts, able to put their knowledge and experiences in enlightening and entertaining words. Of current authors, the names of Jack O'Connor, Elmer Keith, Rudy and Fred Etchen and Warren Page readily come to mind as writers who know firearms and who also know how to make technicalities readily understandable to a reader.

Quite naturally, you will prefer book titles that tie in with your own shooting interests.

For the man wishing to learn how to use a shotgun expertly, I can enthusiastically recommend *Shotgun Shooting* by Fred Etchen, and the shotgun section of *Rifles and Shotguns* by O'Connor. After you have digested those two, read the profusely illustrated *NRA Illustrated Shotgun Handbook,* a publication of the National Rifle Association; *The Modern Shotgun* by Burrad; *Sure Hit Shotgun Ways* by Francis E. Sell; *The Shotgun* by Elmer Keith, and another title by O'Conner, *The Shotgun Book.*

If you can find a copy, don't pass up *The Shotgunner* by Bob Nichols. Some of the book is now dated, but the various sections contain a wealth of technical information still applicable to successful field gunning. Nichols was one of the best, among upland gunners of his day.

The rifleman has choice of a wide variety of book titles. O'Connors' books, *The Rifle Book, Complete Book of Shooting* and the already mentioned *Rifles and Shotguns* should be among first readings.

No target-shooting rifleman or hunter is going to get maximum efficiency from his equipment—including telescopic sights and related optical items—unless he understands their working principles.

Binoculars, Telescopes and Telescopic Sights by Thurman Henson is one of the most complete texts that can be read. It is one of great value to the shooter who wants to work on telescopic sights and binoculars professionally.

For the average shooter, who best leaves repair work to professionals, *Facts About Telescopic Sights,* a Bausch & Lomb publication, will probably prove sufficiently embracive and somewhat easier reading.

The deer hunter can enjoy reading about his sport, as described by various authors. *The American Deer Hunter* by Francis E. Sell and *Advanced Deer Hunting* by the same author are excellent selections for first reading. *How To Hunt Deer* by Freeman; *Deer Hunter's Bible* by Laycock, and *Deer Hunting* by Francis E. Parks are other specialized texts.

The upland gunner will surely find pleasure in *Doves and Dove Hunting* by Byron W. Darymple; *Tales of Quail 'N Such* by Havilah Babcock; *Complete Book of The Wild Turkey* by Roger M. Latham, and *Fun With Game Birds* by Fred Everett.

Waterfowlers will go for *Duck Hunting* by John G. McKenty; *Duck Shooting* by Eugene Connet, and *Duck Decoys and How to Rig Them* by Ralf Coykendall; *Waterfowl Shooting* by Wallace Labasky and *De Shootinest Gentleman* by Nash Buckingham.

Dog lovers will enjoy *Point!* by Horace Lytle, and Bob Becker's *Dog Digest,* the latter a text of the various breeds of hunting dogs and their ancestry. *My Health Is Better In November* by Havilah Babcock is another recommended title, filled as it is with shared bird hunting experiences, written by a sportsman who literally lived to hunt of season.

Varmint hunters will find many practical field tips in *Crow Shooting* and *Calling All Game,* both by Bert Popowski, and *Hunting Crows Year Around* by Adams.

There is a lot of fun to be had from serious or informal target shooting and hunting with a .22—as many happy .22 owners will attest.

For them, *Hunting With A .22* by C. S. Landis and *Rimfire Rifleman* by Edwards Brown will be interesting reading. A copy of *The Smallbore Rifle Handbook,* written by Col. Townsend Whelen and subsequently given more than forty editions, is a "must" for the competitive shooter.

Big bore enthusiasts should read *Military and Sporting Rifle Shooting* by E. C. Crossman. The volume is devoted largely to efficient use of bolt-action military and sporting rifles of Springfield, Enfield and Mauser action, but included timely tips apply to any age of competition.

Bench rest shooting—a sport in which shooters strive to put successive bullets into one hole, and actually come mighty close to it micrometer measurement-wise—is given ample coverage in *Ultimate In Rifle Precision* by Col. Townsend Whelen.

For the handgunner, there are many interesting, helpful texts.

The Art of Handgun Shooting by Col. Charles Askins, Jr.; *Complete Book of Modern Handgunning*

by Jeff Cooper; *Sixguns* by Elmer Keith; *Pistol and Revolver Shooting* by Walter Roper, and *Fast and Fancy Revolver Shooting* by Ed McGivern will be enjoyed by most handgunners.

Reloading is the way to get the best possible ballistic performance from ammunition, while stretching alloted ammunition money.

But reloading is an exacting undertaking, one demanding technical knowledge and care if safe, efficient operations are to be carried out.

Certain basic reloading manuals, like the *Lyman Handbook; Speer Manual For Reloading Ammunition;* the *Hornady Handbook of Reloading; NRA Illustrated Reloading Handbook* and the *MEC Shotgun Reloading Handbook* should be supplemented by reading expanded texts. Many valuable bits of technical information and practical reloading bench tips will result.

The Handloader's Digest, an annual volume by editor John T. Amber, of *GUN DIGEST,* will prove interesting reading to a handloader, as will *Shooter's Bible Reloader's Guide,* a publication of the Stoeger Arms Corporation.

The more advanced, ballistically-minded handloader will want to unhurriedly read such book titles as *Principles and Practices of Loading Ammunition* by Earl Naramore; *Everyday Ballistics* by Charles E. Cummings; *Hatcher's Notebook* by Maj. Gen. Julian Hatcher, and *Complete Guide to Handloading* by Phil Sharpe.

The shooter interested in doing his own gunsmithing will probably find *How To Convert Military Rifles,* a Williams Gun Sight Company publication; *Gunsmithing Simplified* by Horald MacFarland; *Elementary Gunsmithing* by Perry Frazer; *Introduction To Modern Gunsmithing* by MacFarland; *Checkering and Carving of Gunstocks* by Monte Kennedy, and *Gunstock Finishing and Care* by A. D. Newell, and the all-essential *NRA Firearm Assembly Handbook* will adequately cover his technical information needs.

The aspirant to professional gunsmithing, however, will find *The Modern Gunsmith* (two volumes) by James V. Howe; *Gunsmithing* by Clyde Baker; *Professional Gunsmithing* by W. J. Howe, and *Gunsmithing* by Roy F. Dunlap, worthwhile book titles to own as guiding texts.

No gun collector will get far in his chosen hobby without a basic knowledge of gun models of past and present and their fair dollar value.

Gun Collectors' Handbook of Values by Charles E. Chapel; *Firearms Curiosa* by Lewis Winant; *Civil War Collectors' Encyclopedia* by Francis Lord; *Collector's Guide To American Handguns* by DeWitt Sell; *Gun Trader's Guide,* a Stoeger Arms publication; *Collecting Guns* by Serven, and the Williams Gun Sight Company *Blue Book* will give helpful information and possibly prevent gun-buying mistakes.

Histories of the big, present day firearms manufacturers offer interesting reading, as well as knowledge of gun models in their related order of development.

Remington Arms In American History by Hatch; *The Winchester Book* by Madis; *Smith & Wesson* by co-authors Robert Neal and Roy Jenks; *The History of Winchester Firearms* by Hall and Kuhlhoff, and *Colt Firearms From 1836* by Serven are typical texts.

The War Between The States period of firearms manufacture receives specialized treatment in such books as *Confederate Arms* by William Albaugh; *Civil War Carbines* by A. F. Lustyik; *Confederate Handguns* by Albaugh, and *Civil War Guns* by Edwards.

For the shooter who desires to be informed on basic legal rights and restrictions governing firearms generally, the rather dull reading of the complicated provisions of the latest national gun laws will be necessary, if somewhat obtuse reading. More interesting, understandable and ultimately helpful regarding legal technicalities that apply to use of sporting firearms is the NRA publication, *Firearms Laws and Court Decisions.*

There are titles which are hard to put in proper category, but interesting reading in their own scope of valuable technical information. These include the *NRA Firearms & Ammunition Fact Book; Gun Digest Treasury,* a compilation by *Gun Digest* of the best gun subject texts carried by it in the last 20 years; *NRA Shooting Handbook; NRA Question & Answer Handbook; NRA Shooter's Guide; Instinct Shooting* by Mike Jennings; *Treasury of the Gun* by Harold L. Peterson; *The Hunter's Encyclopedia* by Camp, and *Americans and Their Guns* by James B. Trefethen.

Public libraries are sure to have some of the book titles given in the above commentary, but are not likely to have all. In fact, some titles may be hard to find.

However, any book store or public library usually has an index or similar record of currently available book titles, and there are several advertisers in *The Shotgun News* that specialize in gun books, particularly second hand or out-of-print editions.

It takes time to assemble a cross-section library of authoritative gun books. I have spent almost forty years in filling my book shelves, and am still making book purchases. (No, my books are not available for loaned-out reading! Long ago, I learned—the hard way—that all too many loaned books don't get back home, as they should.)

As far as owned technical books are concerned, one has to be firm about loans—even to good friends. ●

CONSERVATION SCENE

Ducks Unlimited

WITH THE ARRIVAL of spring and summer a fair percentage of shooting sportsmen prepared to hang up their guns in favor of fishing, boating and camping, while others switch their shooting activities from fall and winter gunning to varmints, skeet and trap, or just plinking.

It's a time when the waterfowler is apt to forget the thrills he experienced in a duck blind last fall, the number of birds that were at hand, and the reason behind his shooting success.

It is a time when Ducks Unlimited, and the work this organization performs annually in restoring and expanding waterfowl nesting and feeding areas in Canada, is sometimes forgotten.

Autumn is too late to turn to the task DU is seeking help with. The time to insure a healthy and plentiful duck population for next year is now, and the way to do it is to support Ducks Unlimited through membership and contributions.

DU experienced a record-breaking year in 1967, raising a total of $1,240,040.85 through the voluntary efforts of 50 state committees, 29 of which exceeded their contributions quotas. Membership increased to over 35,000, highest in the organization's 31-year history.

Every cent of the more than $800,000 sent to Canada for "duck factory" construction was spent, resulting in the completion of 31 projects last year and the expected completion of five others this spring. This boosts the number of projects built by DU since 1938 to over 850. It now has under lease more than 1.5 million acres of prime marsh areas, encompassing total shorelines in excess of 8,000 miles.

What does all this mean to the duck hunter? It means that waterfowl returning north to Canadian nesting areas will find suitable habitat and feed, and that fall migrations south will be assured. It means more birds and better hunting through conservation of the natural resource.

No matter how busy you may be enjoying your outdoor pleasures now, take time to give your fall duck hunting prospects some serious thought. Look up your local DU committee, take out a membership and ask how you may help in other ways. The investment you make now will pay high dividends for next fall.

It is an accepted fact that any wildlife species will perish without adequate habitat. As a spokesman for the U. S. Interior Department stated recently, a given species faces the threat of extinction when its habitat is threatened with destruction, drastic changes, or severe reduction; or when it is subjected to overexploitation, disease or predation.

Ducks Unlimited has worked successfully for 30 years to prevent such possibilities. Every waterfowler should make it his business to insure continuation of that work.

Hunter's Safety Clothing

HUNTERS WILL have a wide choice of clothing in daylight fluorescent blaze orange this fall, according to the National Shooting Sports Foundation.

Nearly a dozen manufacturers have come out with caps, vests, capes, wrap-arounds, sam-brown belts and even blaze-tipped boot socks to make hunters more visible.

The big advantage of blaze orange is that it does not occur in nature. It is not mistaken for other colors.

Four states—Massachusetts, Iowa, Maine and Colorado—have made blaze orange clothing mandatory for certain types of hunting.

According to the Foundation, blaze orange stands out better than any other color at the critical times of dusk and dawn when other colors fade. For instance, many shades of red turn to black in shadows or periods of low light.

It has always been a primary safety rule for a hunter to wear a color which contrasts sharply with his surroundings for most types of hunting, says the Foundation. Blaze orange does this better than any color yet developed and under varying light conditions.

"If more hunters will wear blaze orange," says the Foundation, "hunting accidents can be reduced greatly in two categories, the mistaken-for-game and walking-into-line-of-fire accidents."

Some hunters are shy about trying such a conspicuous color the first time. They feel as though they are clad in a neon sign, reports the Foundation. The thing that really sells them is hunting

with a companion all day who is wearing blaze orange. When they see how easy it is to spot him, they are at a sporting goods store the next morning!

Refuges Under Pressure

AN OIL STRIKE on the Arctic slopes of Alaska and a proposed Gulf Islands National Seashore in Florida, Alabama, Mississippi and Louisiana are creating still more pressure for the development of units of the national wildlife refuge system, according to the Wildlife Management Institute.

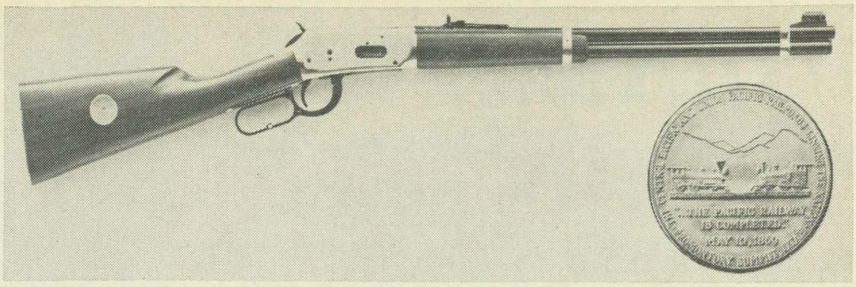
Alaska's latest oil activity is centered immediately west of the 8.9 million-acre wilderness Arctic National Wildlife Range that stretches from the Arctic Ocean south across the Brooks Range and west from the Alaska-Canada boundary. News of the Prudhoe Bay and Skag River strikes has been followed by reports that more oil explorations will comb the Arctic Slope country.

The strikes are sure to renew demands from oil firms, reinforced by recommendations from political figures, that the Secretary of the Interior open the Arctic Wildlife Range. Three requests for permits to conduct subsurface explorations have been denied in recent years. In rejecting the latest request then-Interior Secretary Stewart L. Udall noted that "the unique purposes and values of this wildlife area are extremely vulnerable to environmental disturbances of any kind."

The Gulf Islands National Seashore, proposed in H.R. 14735 now before the House Interior and Insular Affairs Committee, would take in the Gulf barrier islands along a four-state coastal front. Included within the seashore and planned for transfer to the National Park Service are the Horn Island and Petit Bois National Wildlife Refuges in Mississippi.

Horn Island, on which there are some private lands, has been the target of developers for many years. All sorts of proposals have been made to get vehicular access to the island. This may be achieved if the National Park Service connects the island with the mainland in its seashore recreation development.

H.R. 14735 also calls for reservation of rights for oil, gas and other minerals in the owners of lands acquired for the seashore project. Departmental witnesses have urged that this not be done, but if it is, the wildlife refuges, now protected under regulations, may be exposed to oil activities.



The momentous occasion that marked the wedding of the rails of the nation's first Transcontinental Railroad, at Promontory Summit, Utah, 100 years ago will be symbolized in a special limited edition of Winchester carbine. The Winchester "Golden Spike" Commemorative Carbine, to be produced only during the 1969 Golden Spike Centennial Celebration, has a yellow gold-plated receiver, engraved with scrolled border and inscribed with railroad spike flanked by 1869-1969 dates.

Tracking History

WHEN THE SYMBOLIC "Golden Spike" clangs under the ceremonial mallet at Promontory Summit, Utah, on May 10, 1969, more history than meets the eye will be celebrated.

The occasion that marks the wedding of the railroads a century ago will simultaneously honor the "gun that won the West" and the role it played in the building of the nation's first Transcontinental Railroad.

In commemoration of the Centennial celebration of that momentous event in American history, the Winchester-Western Division of Olin Mathieson Chemical Corporation has announced the production of a special limited edition "Golden Spike" carbine for sale during 1969.

Like the Winchester repeaters that were ever present a century ago, providing sustenance and protection for the crews at the end of track, the "Golden Spike" commemorative is the venerable lever action design. Its 20-inch round barrel is fully encircled by twin barrel bands plated in yellow gold. The gun's matching yellow gold receiver, engraved with decorative scrolled border on the right side, is inscribed on the off-side with a railroad spike flanked by the dates: 1869 and 1969.

The barrel carries an identifying "Golden Spike Commemorative" inscription and the upper tang bears the legend: "Oceans United By Rail."

Both the forearm and buttstock of satin-finished American walnut hew to the classic smooth, straight-line tradition of the early west. The straight grip and fluted comb lead the eye naturally to the official Golden Spike Centennial medallion inset in the right side of the buttstock. Struck by the United States Mint, the special Centennial medallion depicts the meeting of the engines of the Central Pacific and Union Pacific Railroads at Promontory Summit, Utah, on May 10, 1869.

Equipped with hooded front and adjustable semi-buckhorn rear sights, the Winchester Golden Spike Commemorative carbine has a straight brass buttplate and blued Western saddle ring. Chambered for the 30-30 cartridge only, the lever action carbine weighs approximately seven pounds and has an overall length of 37-¾ inches. ●

The Brown Pelican

By GENE SMITH

THE BROWN PELICAN population has long been known for its seasonal "ups and downs." But the "downs" have persisted along the northern Gulf of Mexico in the past 10 years to the extent that this large, slow-flying bird has simply vanished from most of its former range.

Louisiana, for example, once had an abundant Brown Pelican population, and is, in fact, known as "The Pelican State." But the bird is not known to have nested there since 1961.

Less than a dozen pairs were said to have nested in Texas in 1966. Only four nests were found in 1967. Two pairs were reported nesting there last year . . . out of a censused population of 13 adults.

The alarming story has been about the same in Alabama and Mississippi and on the Atlantic coasts of the Carolinas.

Nobody knows exactly why the Brown Pelicans disappeared along the northern gulf. In truth, hardly anybody missed them until they were gone, leaving peninsular Florida and South Carolina as the only places in the Southeastern United States where substantial nesting colonies are still found.

Adding to the problem of saving the remaining populations, and, perhaps, one day restoring the former numbers, is the fact that very little biological information was obtained on the species as it formerly existed.

But, alerted to the danger—and to the distinct possibility—of losing the remaining Brown Pelicans, several state conservation agencies, the U. S. Fish & Wildlife Service, the National Audubon Society, and a number of private foundations, are studying the pelican situation on a cooperative basis.

Research biologists Lovett E. Williams, Jr., and Larry Martin, of the Florida Game and Fresh Water Fish Commission, undertook a study on the species in 1965. They had three main objectives: (1) to census the nesting population in Florida; (2) to learn the nature and causes of mysterious deaths of pelicans, and (3) to learn, if possible, whether disease, parasites, or chemical pollution pose threats to the birds.

Using aircraft largely, but also boat transportation, the biologists found about 6,700 *active pelican nests* in early May 1968. They ranged from the area of the mouth of the Suwanee River on the Gulf of Mexico through the Florida Keys and along the Atlantic coast northward almost to Daytona Beach. There were 24 *active colonies.* less than one third of them on the Atlantic coast. All the nests were on *small islands* and, based on preliminary aerial counts of the two previous nesting seasons, there was considerable evidence of colony shifting from year to year, especially in the Gulf. (The less frequent colony shifts on the Atlantic coast suggested a possible shortage of suitable nesting habitat there.)

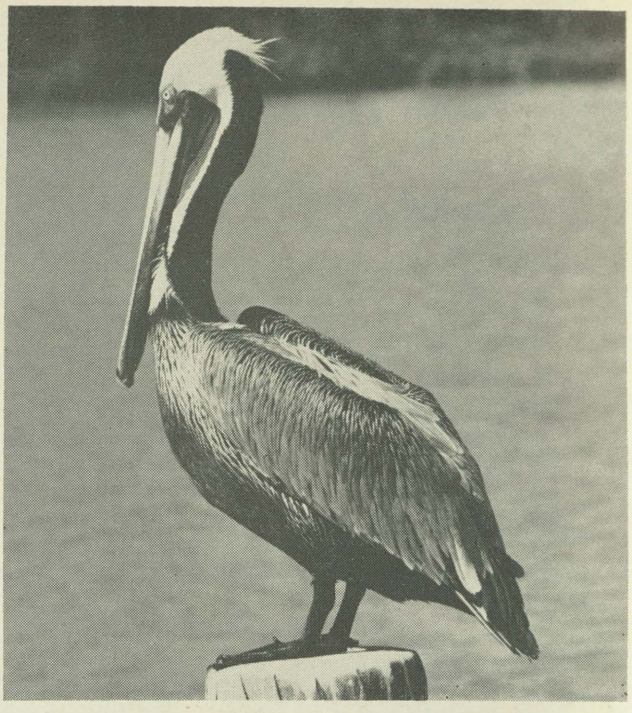


Photo By Mike Fogarty

Hopefully, this interesting bird will hold its own until the causes of alarming decline can be discovered—and reversed.

Pelican Island, in the Indian River, near Sebastian, Florida, has been used off and on by these birds as a nesting site at least since 1858. This well known, 3-acre island was designated a federal wildlife refuge by executive order of President Theodore Roosevelt in 1903—the first federal wildlife refuge in the United States.

Information indicates that Florida had a Brown Pelican population in excess of 10,000 birds in 1968, not counting nestlings.

Preliminary examinations of a number of pelican carcasses collected around Florida indicate the presence of some pesticide residues, but in minute, relatively insignificant quantities, say the researchers. Investigations in this area continue, along with plans for prompt investigation of any reported die-offs of Brown Pelicans in Florida.

The clownish, friendly pelican is a skilled fisher, known for its violent, headlong dives into the water to capture dinner in its leathery pouch. On land or dock it waddles about awkwardly but on the wing it is one of the most graceful of birds. Pelicans fly in neat, oblique lines or V formations, sometimes high, sometimes just at the top of the waves. They have a 6-foot wingspan.

Brown Pelicans nest on the ground or in trees, seeming to prefer ground nesting on the smaller islands and higher nesting elevations the larger the island—at least in Florida pelican colonies. ●

For that BIG ONE

that didn't get away

ELIGIBILITY REQUIREMENTS
SPECIES

LARGEMOUTH BASS
.....8 pounds or larger

CHAIN PICKEREL
.....4 pounds or larger

BLUEGILL (BREAM)
.....1 ½ pounds or larger

SHELLCRACKER
.....2 pounds or larger

BLACK CRAPPIE
.....2 pounds or larger

RED BREAST
.....1 pound or larger

All fish must be taken from the fresh waters of the state of Florida, as defined by the Game and Fresh Water Fish Commission. Fish must be caught on conventional fishing tackle, with artificial or live bait, in the presence of at least one witness.

The catch must be weighed and recorded at a fishing camp or tackle store within the state by the owner, manager, or an authorized agent of the respective establishment.

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The Editor, FLORIDA WILDLIFE Date_____
Game & Fresh Water Fish Commission, Tallahassee, Fla.

Please send me the Florida Wildlife Fishing Citation with the inscribed data listed below:

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Address _____

City_____ State_____ Zip No._____

Species_____ Weight_____ Length_____

Type of Tackle_____

Bait or Lure Used_____

Where Caught_____ in_____ County

Date Caught_____ Catch Witnessed By_____

Registered, Weighed By_____ At_____

Signature of Applicant_____

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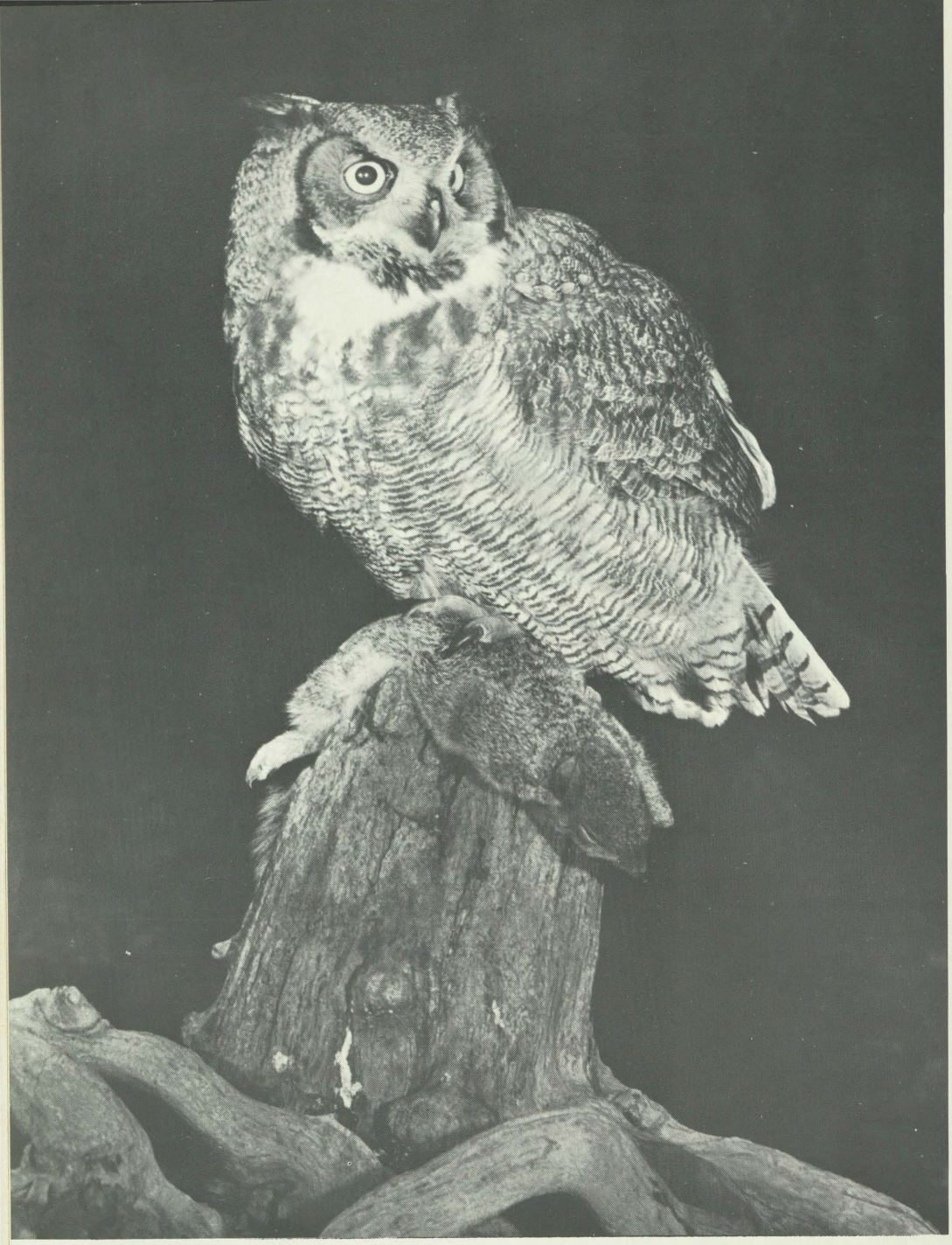

Great Horned Owl with Gray Squirrel

Photo By Leonard Lee Rue III

FLORIDA WILDLIFE Magazine
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